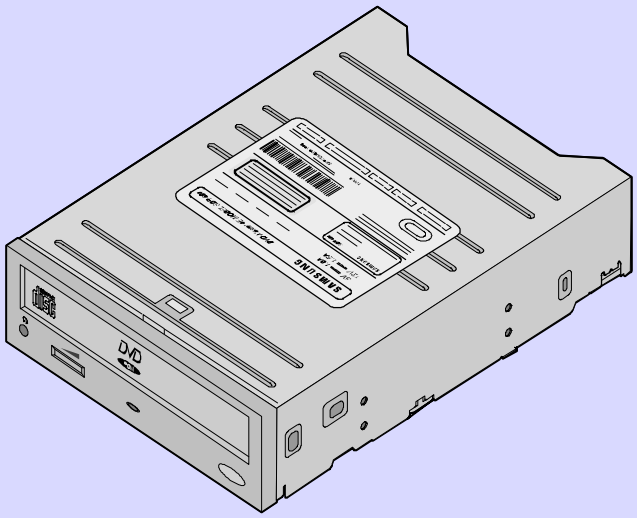
SAMSUNG

DVD-ROM DRIVE
SD-606F

DVD-ROM Service Manual

DVD-ROM DRIVE



CONTENTS

1. Precautions
2. Specifications
3. General information
   - 3-1. External part name
   - 3-2. Cricuit description
   - 3-3. Troubleshooting
   - 3-4. IC internal block and IC pin option
4. Disassembly and Reassembly
5. Alignment and adjustment
6. Exploded views and prats
7. Cricuit Part list
8. Block diagram
9. Electrical board
10. Schematic diagrams

¨ÏSamsung Electronics Co.,Ltd.
May.1999 Printed in Korea
Code No.:BG68-00091A

1.Precautions

1-1. General items

1) Be careful not to have eyes or a part of body touch with laser diode at repair because this product uses laser diode.
2) Do not disassemble Pick-up at repair. If the laser diode is bad, replace the entire Pick-up.
3) Keep away from TV or other electrical units at repair to prevent a influence from surrounding units.
4) If you want to replace the parts during repair, be sure to plug off power cable before replacement.
5) If you insert a disc into CD player, beg sure to load it correctly.
6) Because this unit can't be used by itself, surely mount it on PC(pentium or more) and check the operations in use of private device drive floppy diskettd. Refer to Instruction manual.
7) This unit has many parts with features related to safety and especially, for essential parts, the importance is indicated on circuit diagram and part list. Be certain to use the parts with same specifications at replacing these parts.

1-2. Electricity sensing device

Some semiconductor units may be damaged easily by electricity. These elements are called as electricity sensing device(ESD) in general. For example, integrated circuit, field effect transister, semiconduct chip.
The following methods have to be used to reduce the accident of element damage generated by electricity.

1) Emit all electric charges in your body through contact with earthing materail at once before handling a semiconductor factor or device including it.
   In other way, make use of commercial wristlet against electIC101ty. It shall be detached before power impression to the unit on testing because of shock.
2) After detaching an electrical device including ESD, it shall be placed on conductive urface such as aluminium to prevent the charge acummulation and unit exposure.
3) Utilize only the soldering iron with earthed end for ESD soldering or release.
4) Make use of only anti-static soldering release unit. A soldering release unit not to be classified as anti-static may generate the enough charge to damage ESD unit.
5) Never use a Freon-propelling chemical product. It may generate the enough charge to damage ESD.
6) Untill installing ESD unit for replacement, never it from protection package.(Most of ESD unit for replacement have lead composed of package shorted electrically by conductive foam, aluminium or similar conductive material.
7) Contact with shassis including ESD or protection material in circuit parts hust before detaching the protection meterial from lead of ESD unit for replacement.

   NOTE: Be sure to avoid the power impression to the shassis or circuit and observe the safey instruction

8) Minimize the body action at handling an unpacked ESD unit for replacement.
   (Otherwise, an unconscious action, so to speak, friction between clothes or foot lifting from carpet floor may generate the enough charge to damage ESD unit.)

1-3. Safety instructions

1) Read all safety and operational manuals before operating this product.
2) Keep the safety and operational manuals for future reference.
3) Observe all precations and operational instuctions in or on the suface of this product.
4) Follow all operation and maintenance cautions.
5) Be sure to plug off the power cable before cleaning. Use a dry cloh to clean a dusty cover of cabinet instead of Instead of liquid or aersol cleaner.
6) Never use a attachment not to be recommended by this company. It may result in danger and damage.
7) Never use this product around water such as bathtub, washbasin, laundry machine, swimming pool or lakeside.
8) Never place this product on bed, sofa or around radiator and heater.
9) Power : Utilize the only power displayed on lebel If the power type can't be checked, call to dealer of Korea Electricity, Co, Ltd. Refer to operate this product by battery or other power.
10)Lightning : Plug off the power cable for product protection during thunder and lightning flashes or this product is unused for a long time.
11) Overload: Be careful that the wall outlet and expanded cord is overloaded due to danger of fire and electric shock.
12) Never insert a substance or liquid into this prouct. It may cause fire or shorck by contact with voltage point or short.
13) Part replacement : The service engineer has to use the parts of same specification at replacement. Otherwire, Otherwire, fire, shock or other dangers may be occurred.
14) Safety check : Be sure to perform the safety check at service or repair completion.

Importance :
This product includes special impotrant parts on safety. These parts are indicated by ⚠ on schematic diagram.
At replac ement of these parts, use the parts of same specification due to shock, fire or other dangers.
Never transform the original design without permission of this company.

1-4. Earthing cautions at handling Pick-up

Because the laser diode in optical Pick-up is subject to get out of order due to the potential difference occurring by electricity load charged in clothes or bodies, observe the following eathing items at handling.

1) Body earthing at repair : Be sure to wear a wrist strip with one side earthed.(Impedance : Below 10^4§Ù). It removes the electicity formed in body.

2) Wire table earthing : Put the earthed conductive Plate(Impedance : Below 10^4§Ù)such as copper plate on work table.

3) Cautions for clothes : Do not have any clothes is destroyed easily.
4) FFC operation be careful to handle FFC because it may be damaged easily.

2. Specifications

The specification and design may be altered without previous notice and the below weight and dimensions are approximate values.

General option	Drive type		Computer built-in
	Power consumption		DC + 5V, 1.5A . DC + 12V, 1A(MAX)
	Weight		830g
	Dimension		149mm(W)*200mm(D) * 42.5mm(H)
	Allowable operational temperature		+5C~ +45C
	Allowable operational humidity:		8% ~ 80%
Electrical feature	Standard mode		CD-ROM Mode 1,2
	Interface		ATAPI BUS (IDE)
	Data transfer rate		CD-ROM:4,800Kbyte/sec,DVD-ROM:6,800Kbyte/sec
	ACCESS TIME	CD-ROM	1/3 stoke Below : 100ms
			full stoke Below : 180ms
		CD-ROM	1/3 stoke Below : 110ms
			full stoke Below : 200ms
	Buffer capacity		512KB
	Error ratio	CD-ROM	Mode 1 : Below 10^{-12}
			Mode 1 : Below 10^{-9}
		DVD-ROM	Below 10^{-15}
	Frequency response		20Hz to 2KHz : Below + / - ¾ 3dB
	Sign al to noise ratio		LINE OUT over : 75dB
			H/PHONE over : 65dB
	Distortion factor		Below 0.15% (1KHz)
	Signal output level		LINE OUT : 0.7Vrms + / - ¾ 20%
			H/PHONE : 0.6Vrms + / - ¾ 20%
	Used Laser		Semiconductor laser

4. Disassembly and Reassembly

4-1. Exterior and PCB disassembly

4-1-1 Door-tray

1) Supply power to open the tray ❷ direction of arrow "A"
2) Lift up the door ❶ in direction of arrow "B"
3) Close the tray ❷ and power off.

Reference: If the tray ❷ doesn't open, push the clip ❸ into specified hole shown in detailed figure to open it compulsorily.

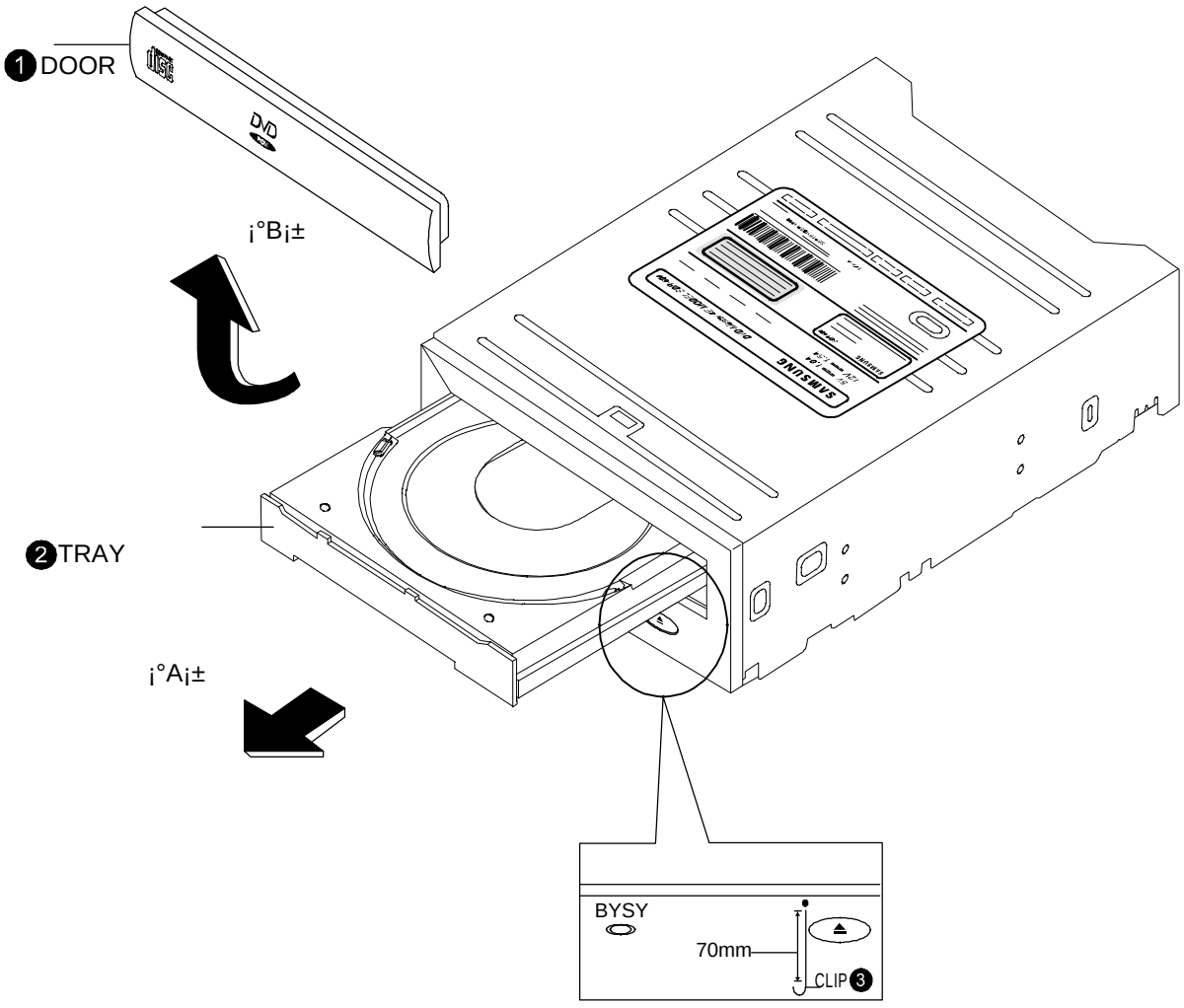


Figure 4-1 Door tray

4-1-2 Panel front

1) Remove 6 hooks ❶
2) Take out the panel-front ❷ forward.

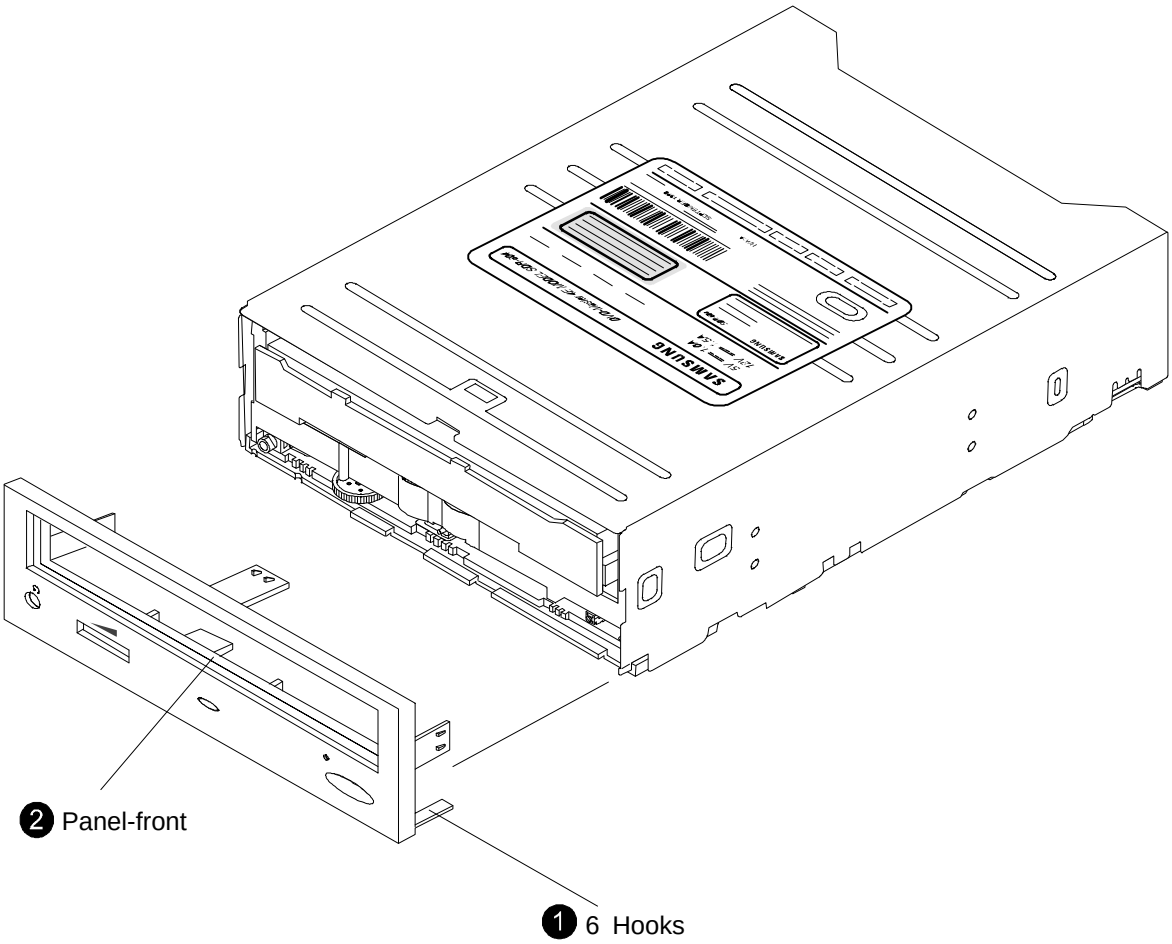


Figure 4-2 Panel-front

4-1-3 Top-cabinet

1) Remove 4 screws ❶ in the bottom
2) Lift up the top-cabinet ❷

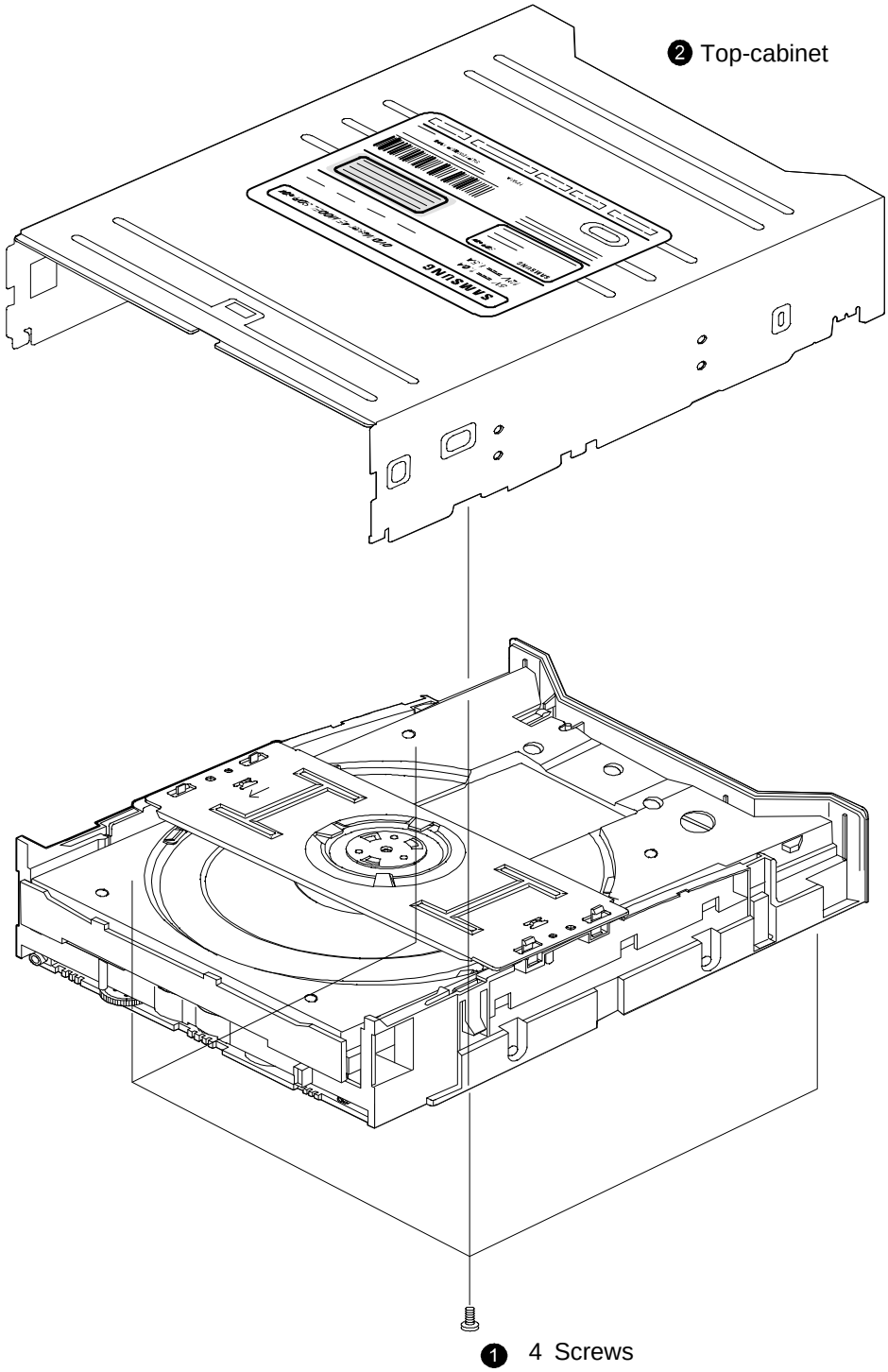


Figure 4-3 Top-cabinet

4-1-4 Ass'y-frame Low

1) Lift up the ass'y frame ❷

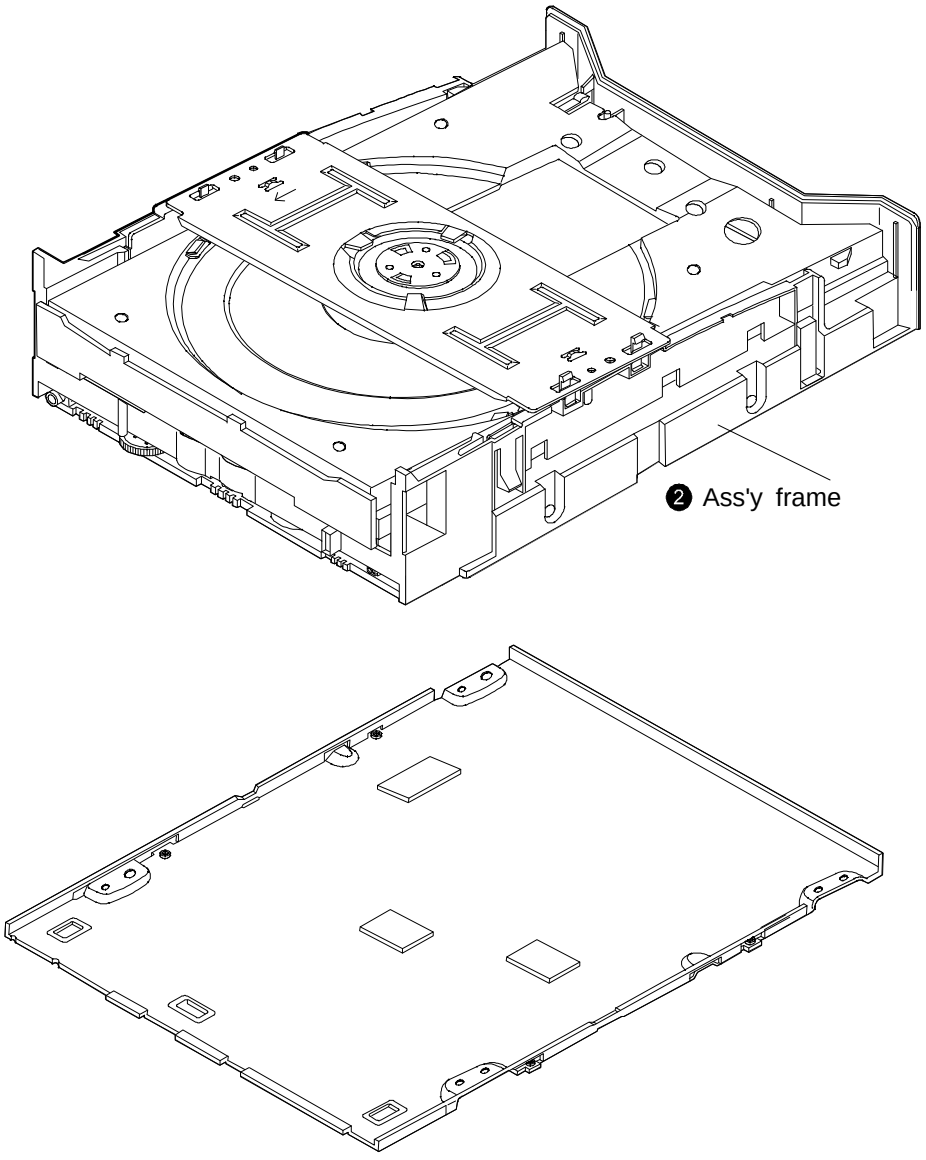


Figure 4-4 Ass'y-frame Low

4-1-5 MAIN-PCB

1) Remove 4 hooks ❶ for PCB fixing in deck.
2) Disassemble the MAIN-PCB ❷
3) Disassemble the Step Motor FPC ❸ in PCB.
4) Remove soldering at motor connection wire ❹ PCB.
5) Disassemble the FPC ❺ between Main PCB and Front PCB.
6) Disassemble the FPC ❻ between Main PCB and Front PCB.

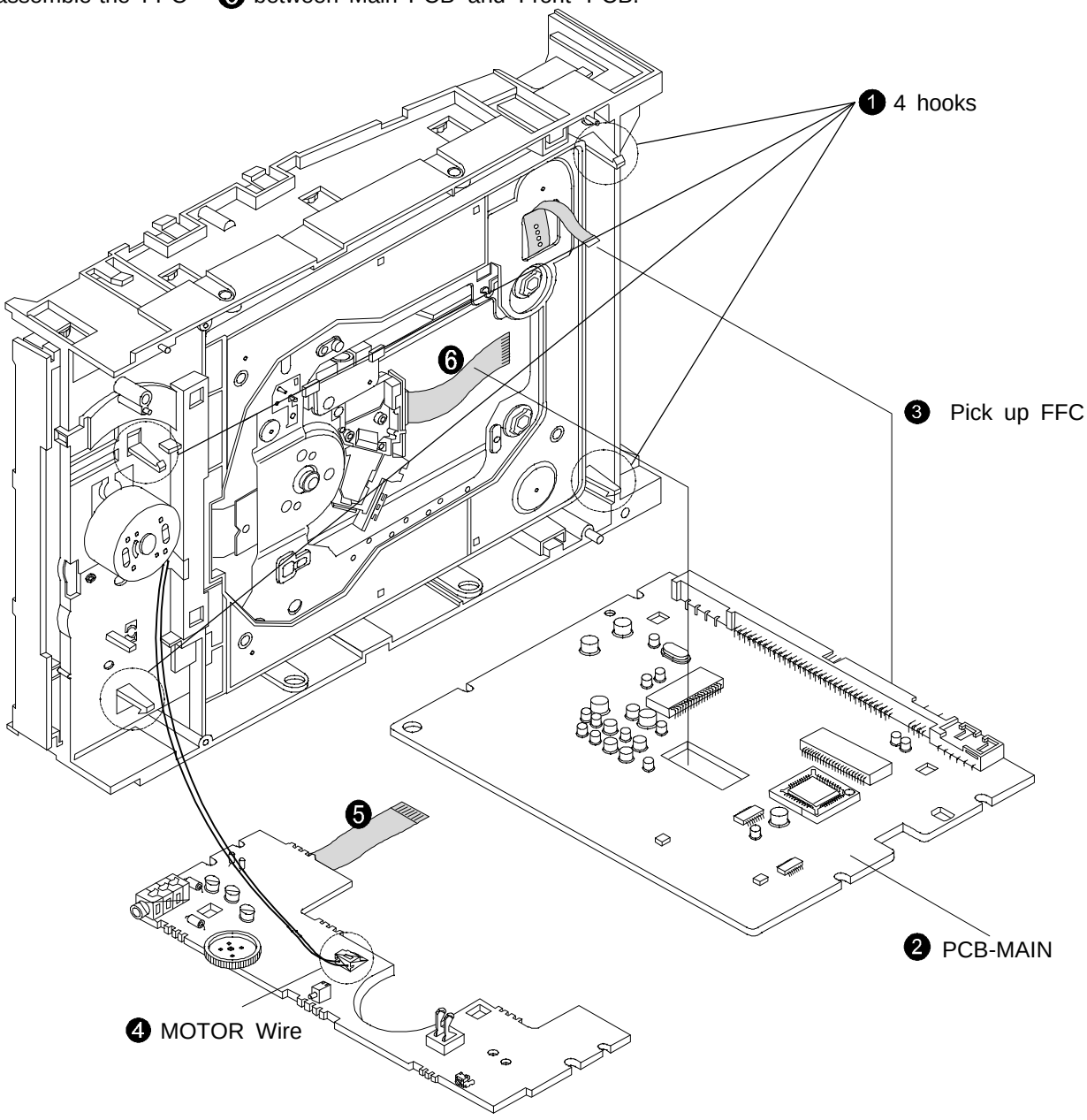


Figure 4-5 Disassembly connector

4-3. Deck disassembly

4-3-1 Tray, Clamper

1) Remove 4 hooks ❶
2) Lift up the ass'y clamper ❷
3) Push 2 hooks ❸
4) Lit up the tray ❹

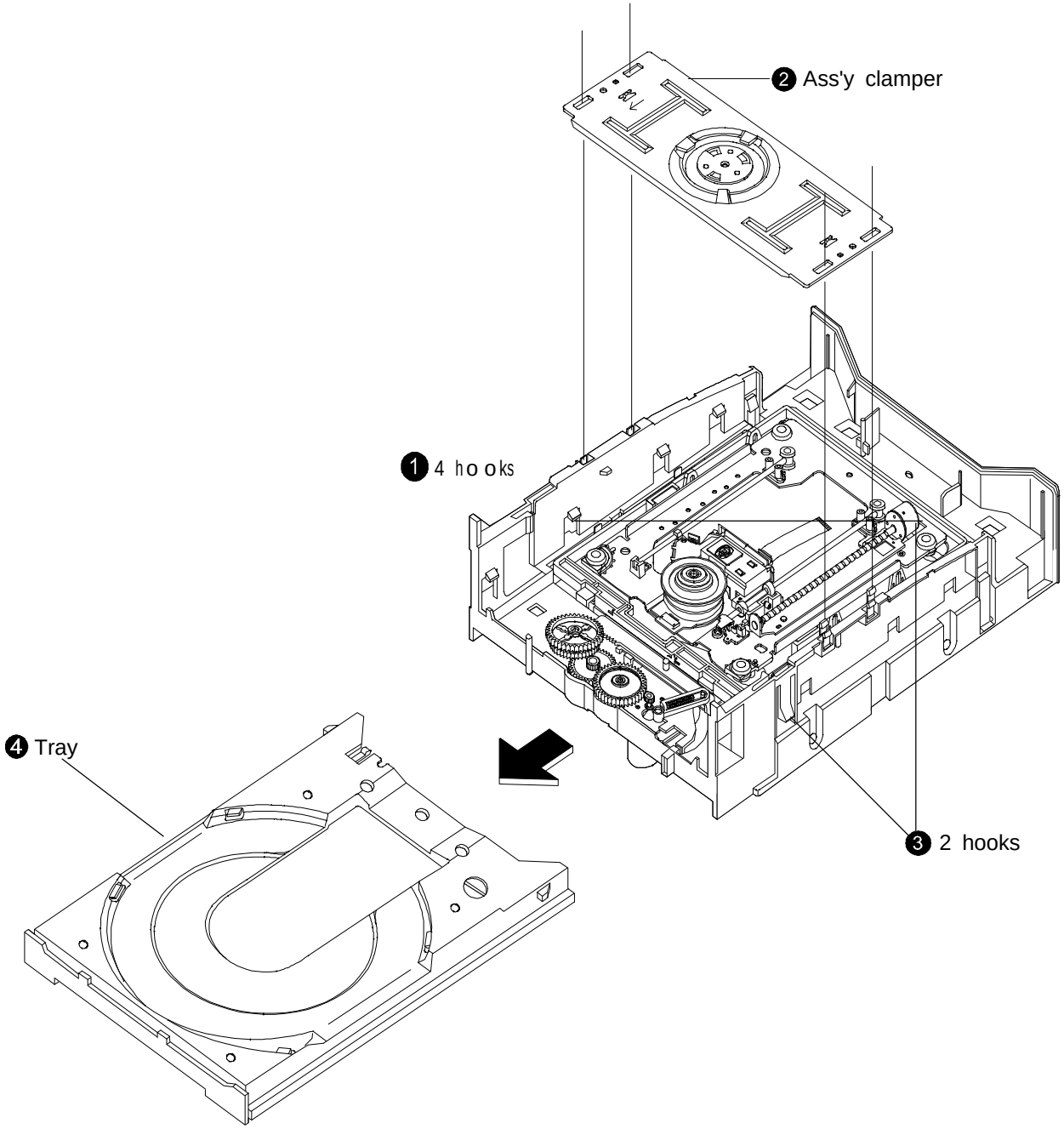


Figure 4-6 Tray

4-3-2 Ass'y-Deck DVD

1) Move the slide cam ❶ in left direction.
2) Disassemble the ass'y-deck DVD ❸ in arrow "B" direction with pushing the 2hooks ❷ in direction of arrow "A"

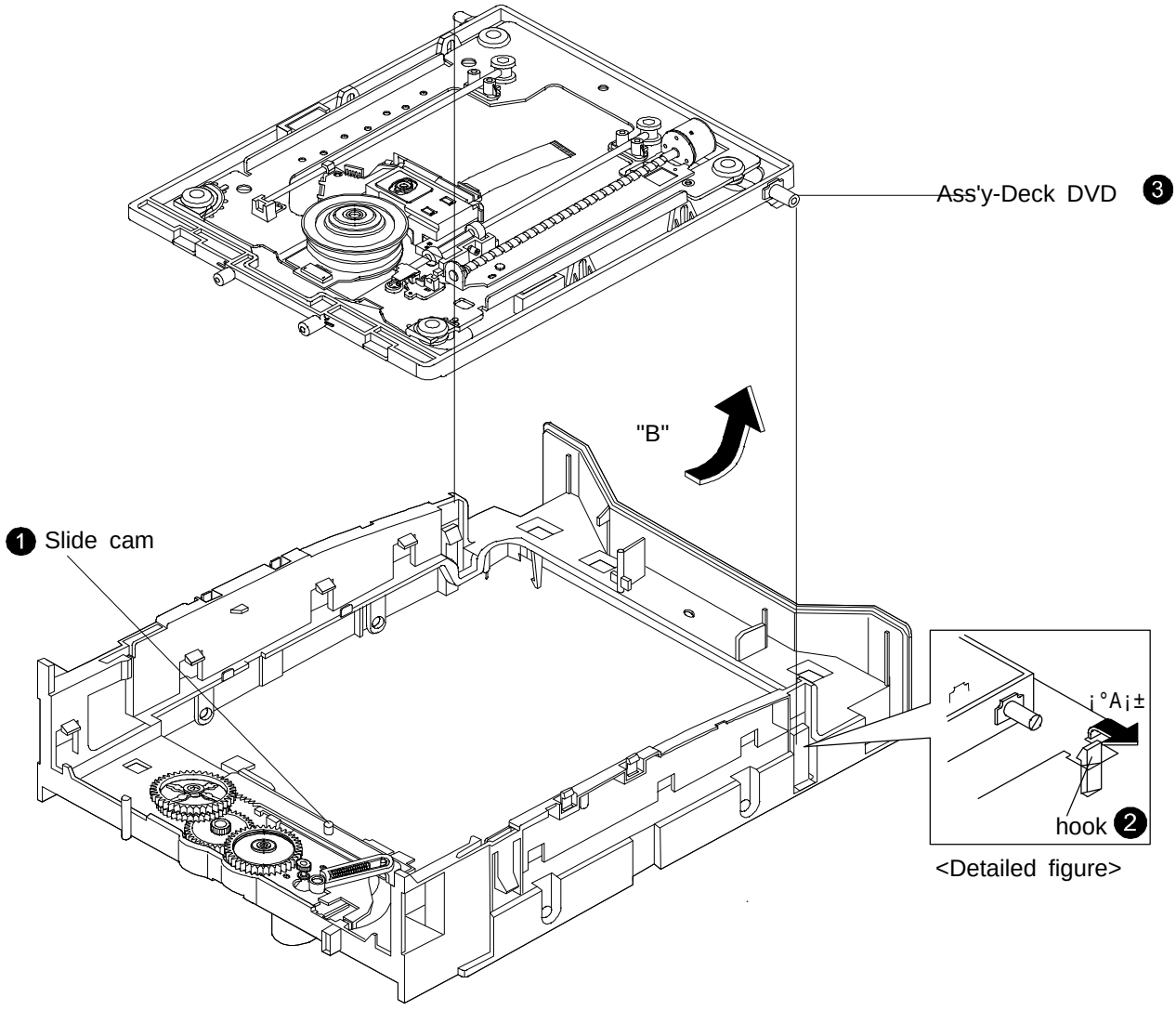
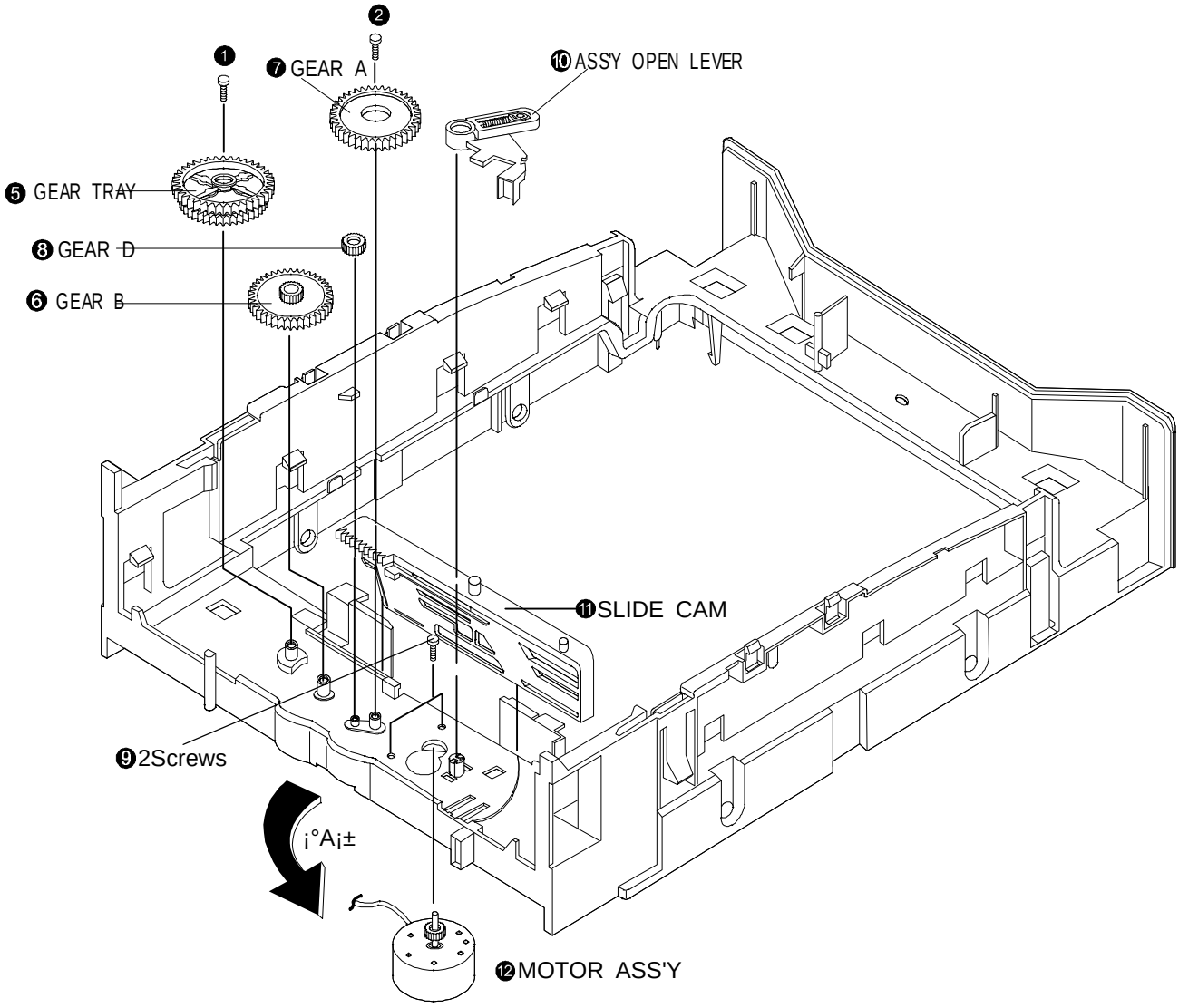


Figure 4-7 Ass'y-Deck DVD

4-3-3 Chassis-main individual materials

1) Remove screw ❶ and lift up the GEAR TRAY ❺
2) Lift up the GEAR B ❻
3) Remove screw ❷ and lift up the GEAR A ❼ GEAR D ❽
4) Lift up the ASSS'Y OPEN LEVER ❿
5) **Lift up the SLIDE CAM ⓫**
6) Remove 2 screws ❾, and remove the MOTOR ASS'Y ⓬ in "A" direction



Assembling the motor and pulley: The height of pulley shall be same as the end of motor shaft.

Figure 4-8 Chassis-main individual materials

4-3-4 Ass'y-deck

1) Remove 4 screws ❶
2) Lift up the ass'y-deck ❷
3) Remove the pick-up FFC ❸ in "A"

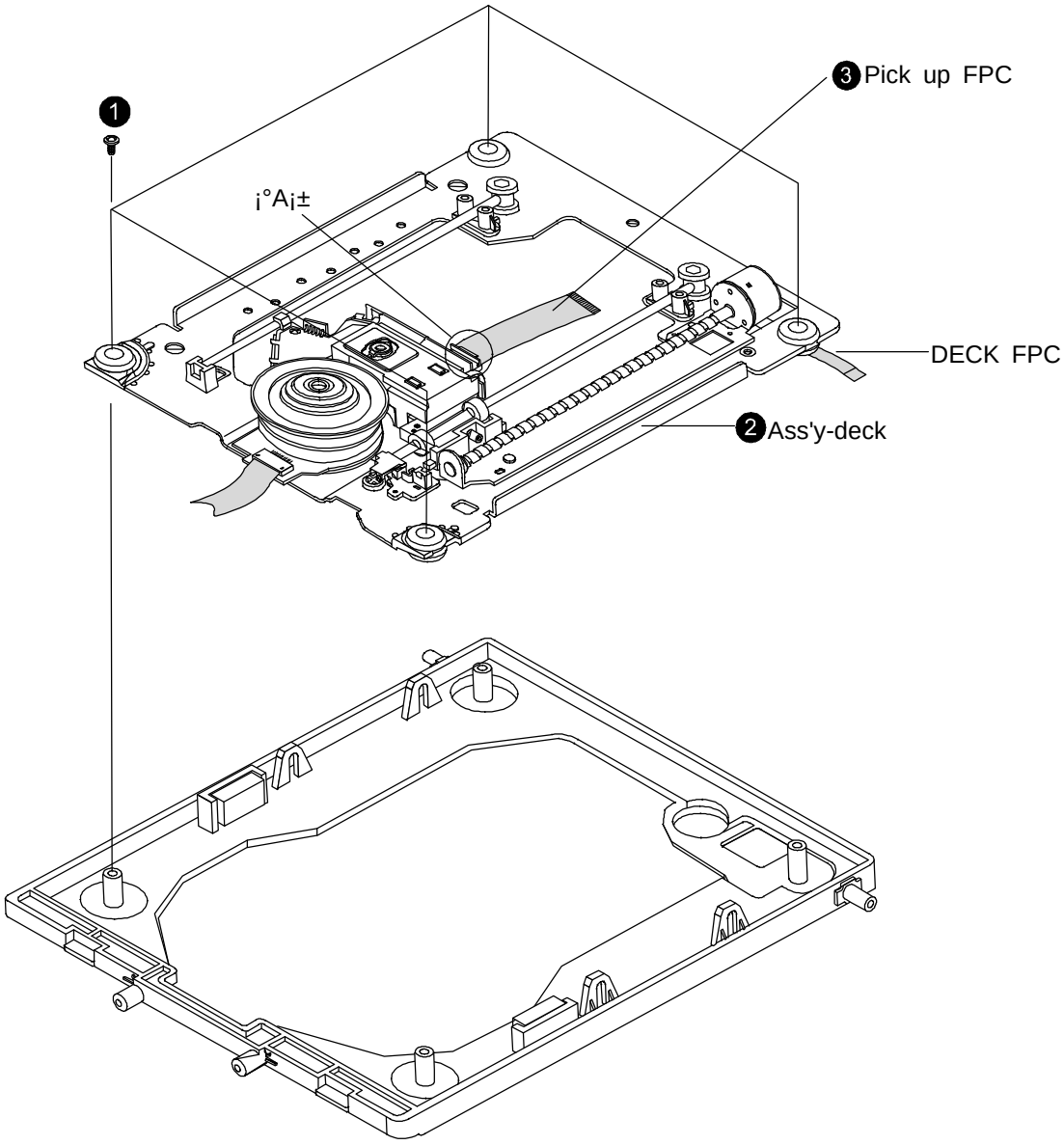


Figure 4-9 Ass'y-deck

4-3-5 Ass'y-deck individual materials

1) Remove 4 dampers ❶
2) Rotate 180¡£ the SHAFT COVER ❷ in CCW direction.
3) Remove 2 screws ❸ and remove the 2 CAMs ❹ and lift up SHAFT P/U ❺
4) Lift up the Ass'y ❻
5) Remove 3 screws ❼, and removev the MOTOR SPINDLE ❽, and disassemble the DECK-FFC ❾
6) Remove 2 screws ❿, and disassemble the STEP MOTOR
7) Remove 1 screw and disassemble the spring plate ⓫

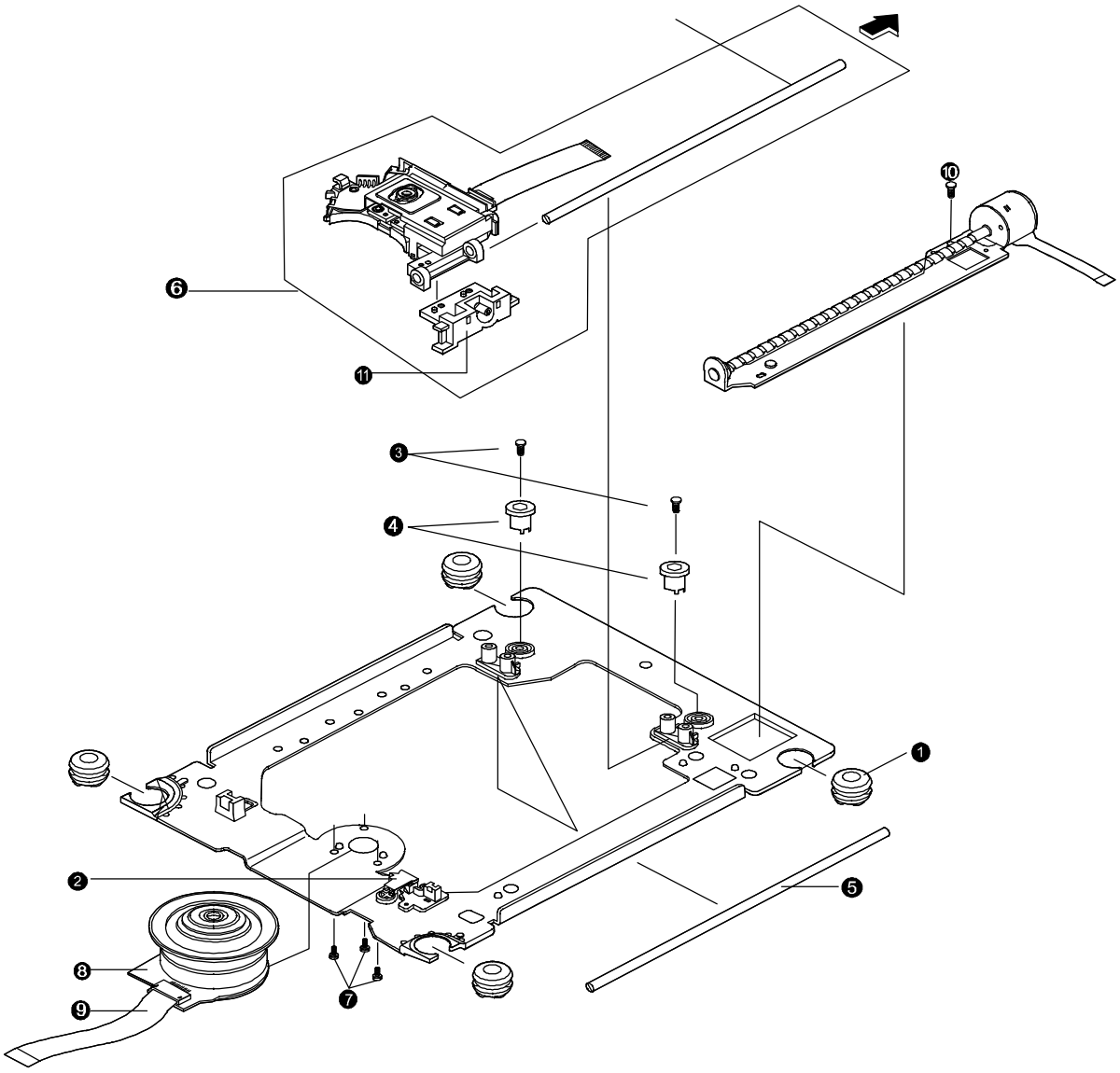


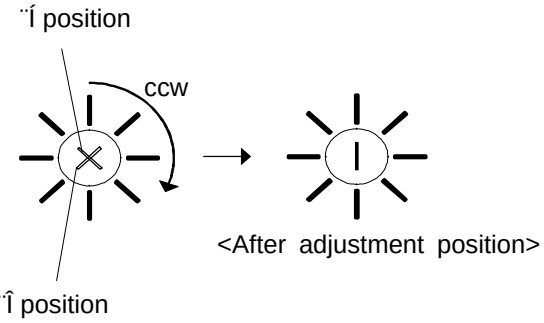
Figure 4-10 Ass'y-deck individual materials

5. PLL ADJUSTMENT

5-1. PLL adjustment(FOR DVD)

1) Insert DVD disk, make it full stroke on CDT. Making use of SVR1, and then turn it CW with at the controller. Next turn VR CCW at the point ¨Í of stoping stroke. Again check up the point ¨Î of stoping stroke VR ¨Î located between point ¨Í and ¨Î. VR is lied halfway between two point.

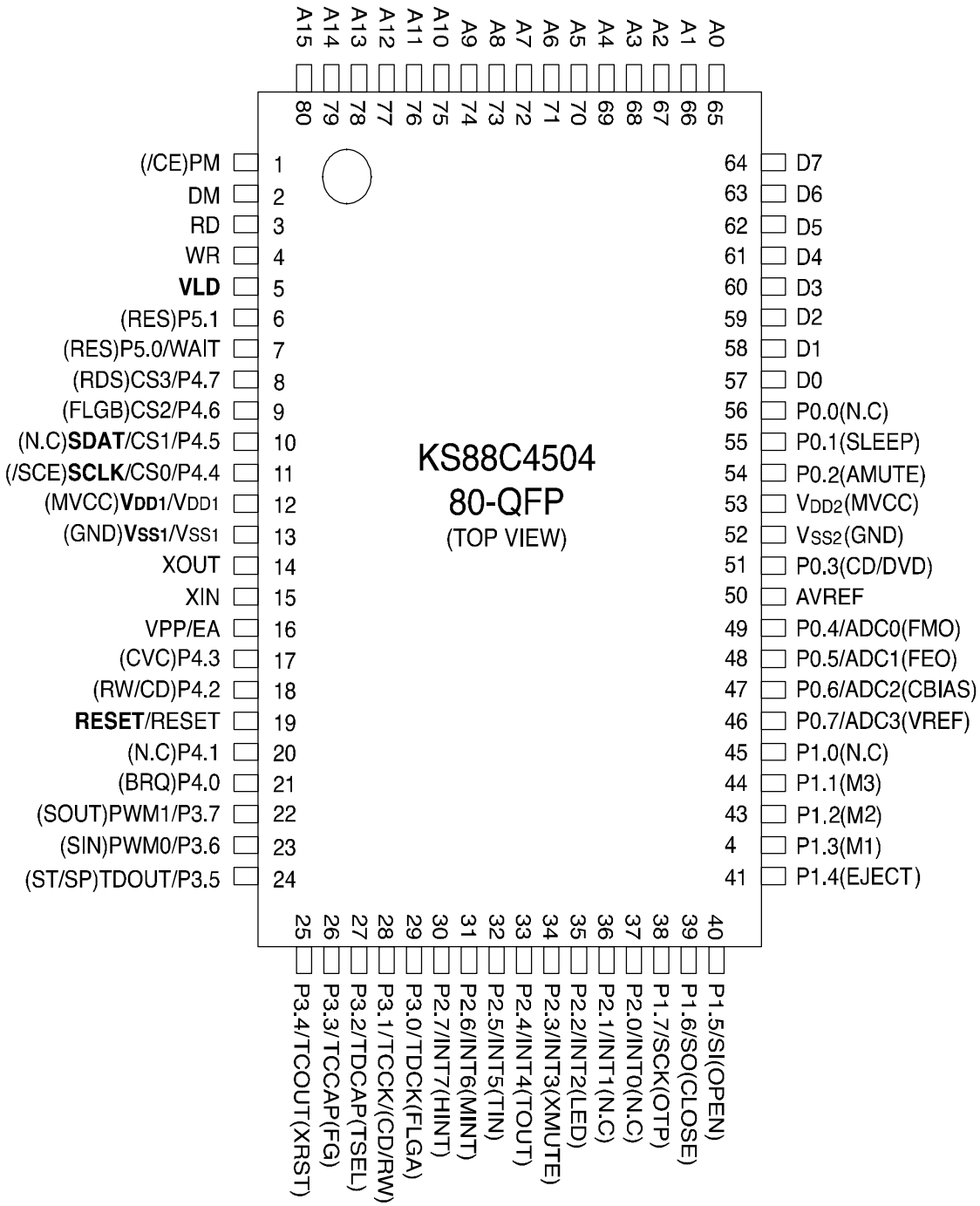
ex)



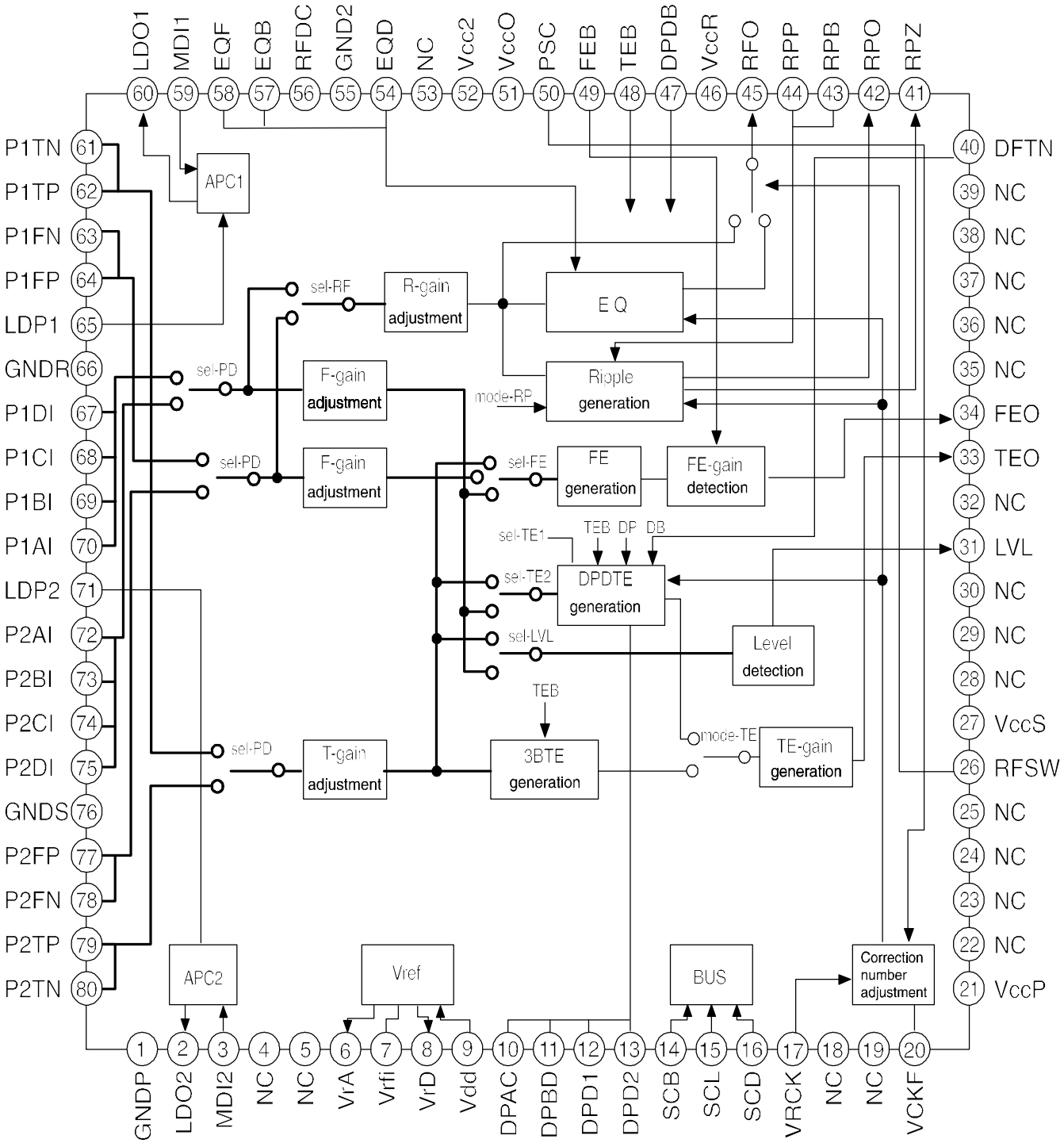
<MAIN-PCB:operational position diagram>

3-4. IC internal block and IC pin option

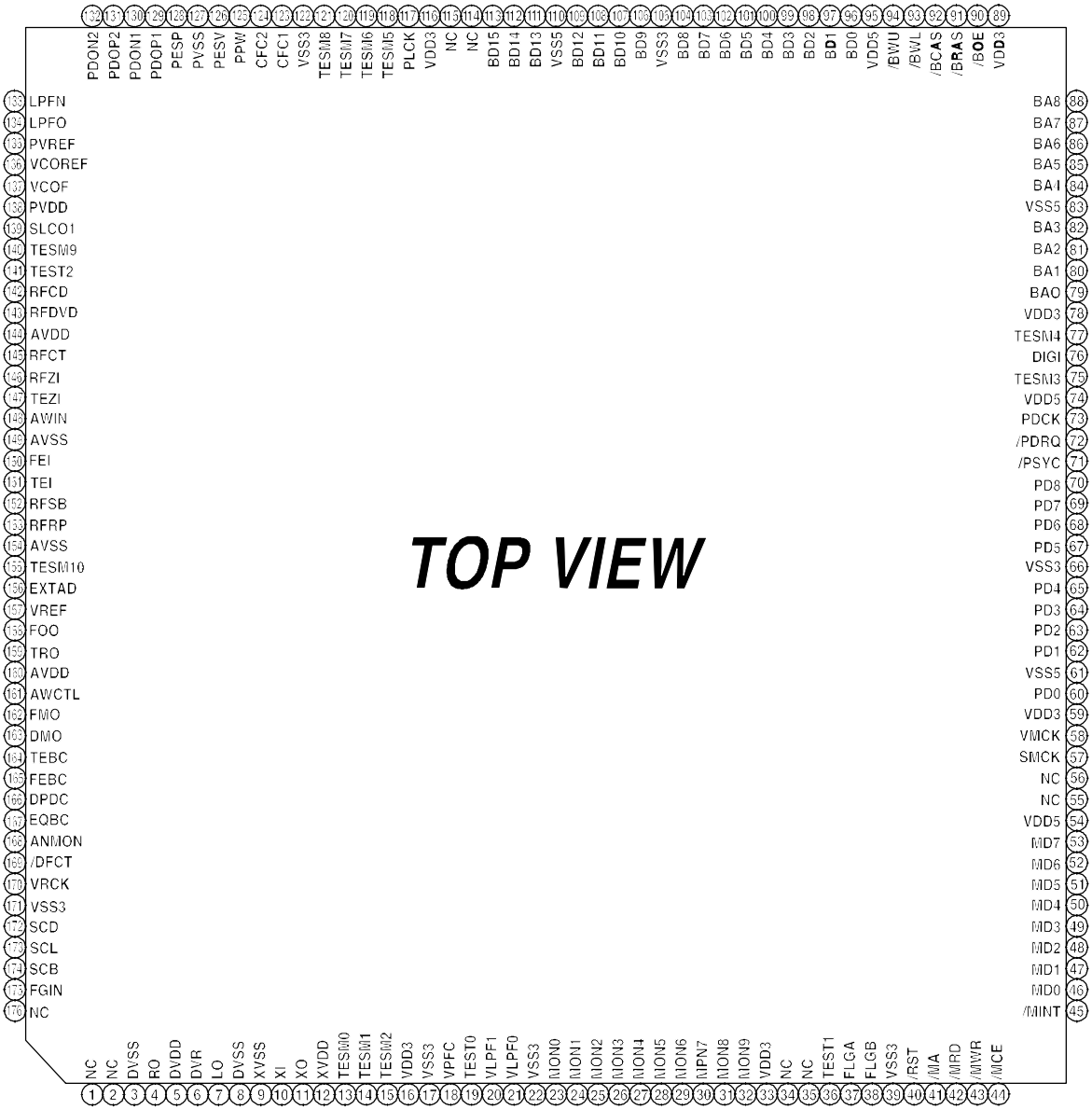
3-4-1 IC301(KS88C4504)



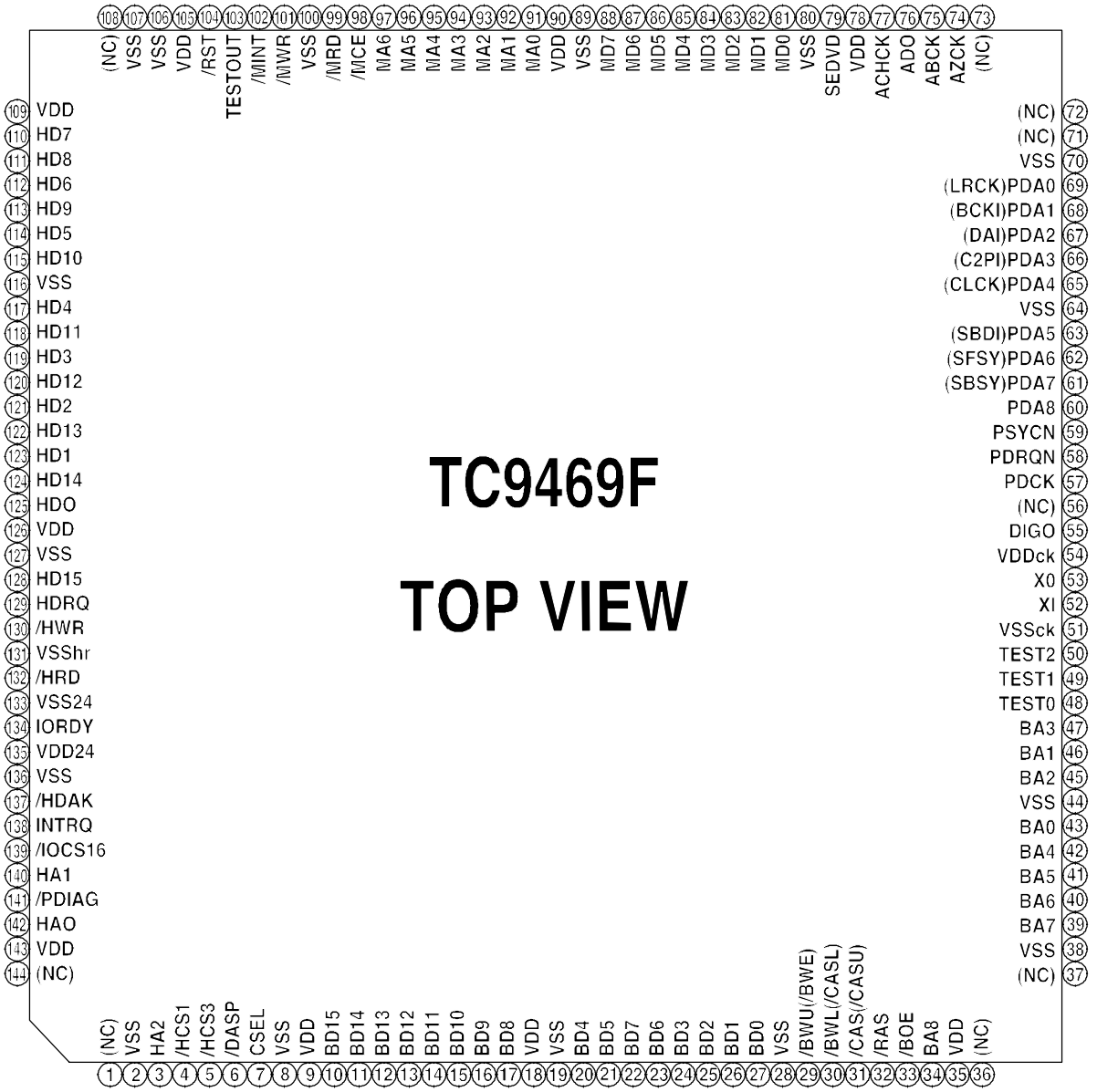
3-4-2 IC101(TA1293F)



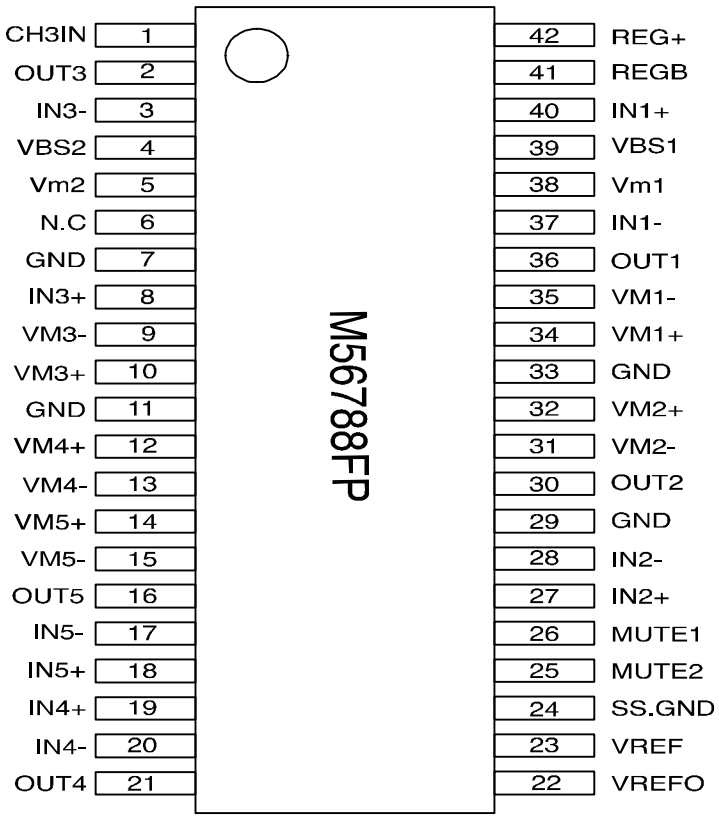
3-4-3 IC201(TC 9453AF)

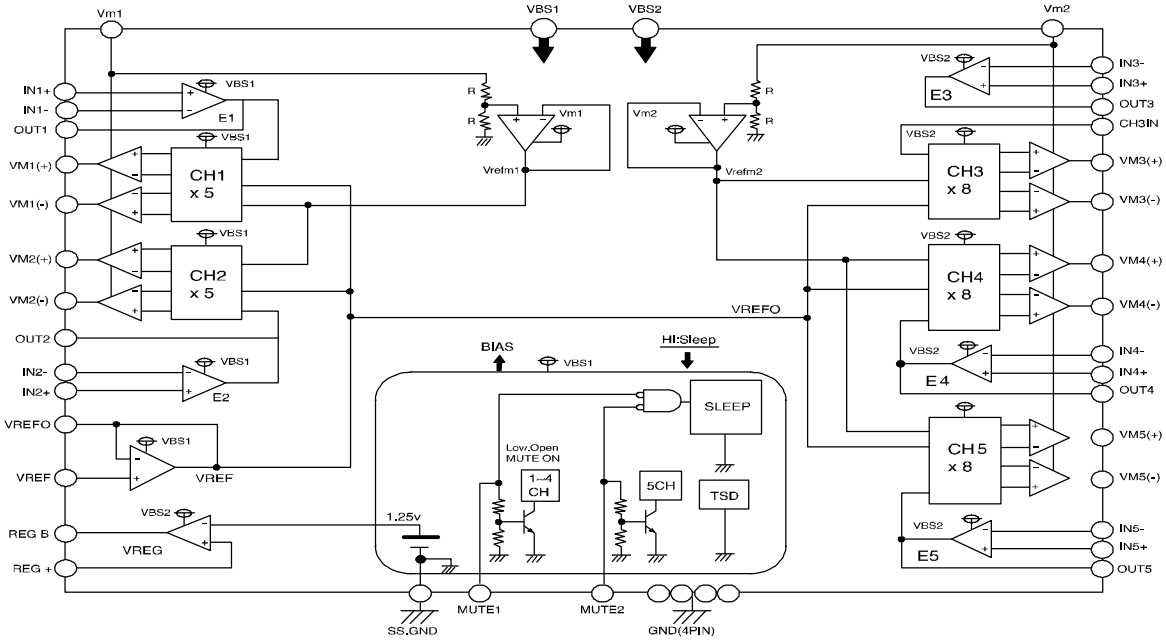


3-4-4 IC501(TC9469F)

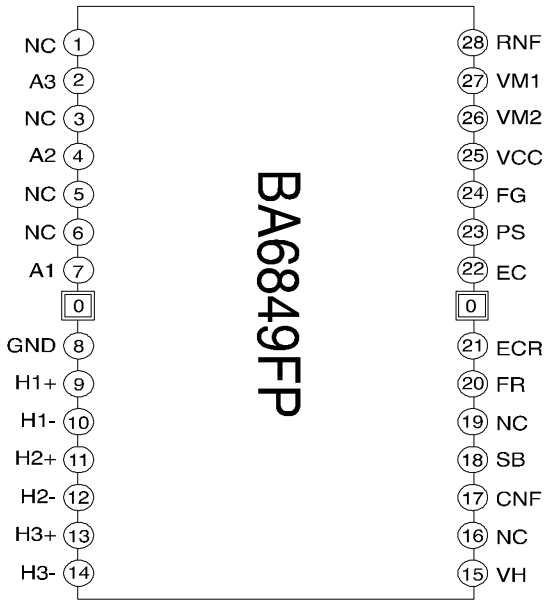


3-4-5 IC401(M56788FP)

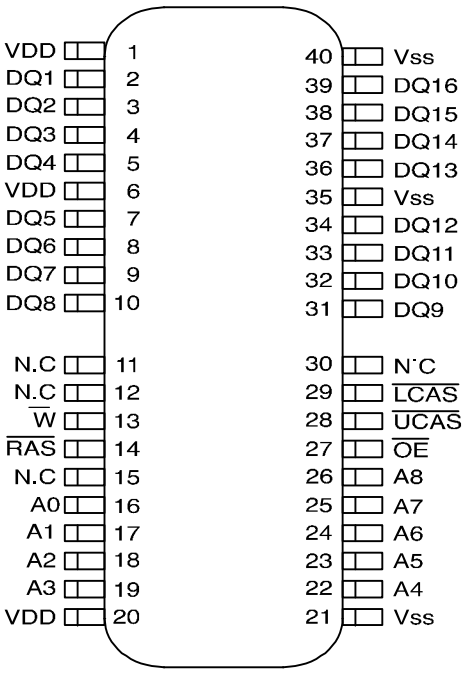




3-4-6 IC402(BA6849FP)

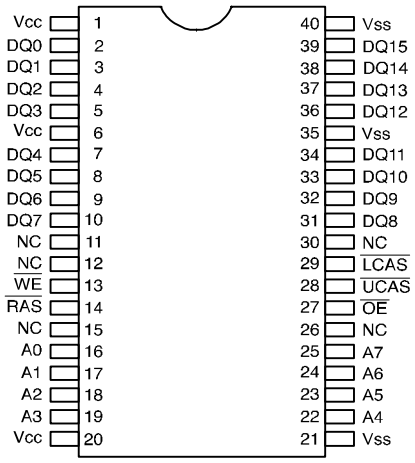


3-4-7 IC502(MIIB416256A)



Pin Name	Pin Function
A0-A8	Address Inputs
DQ1-DQ16	Date In/Out
Vss	Ground
$\overline{RAS}$	Row Address Strobe
$\overline{UCAS}$	Upper Column Address Strobe
$\overline{LCAS}$	Lower Column Address Strobe
$\overline{W}$	Read/Write Input
$\overline{OE}$	Date Output Enable
VDD	Power(+5V)
	Power(+3.3V)
N.C	No Connection

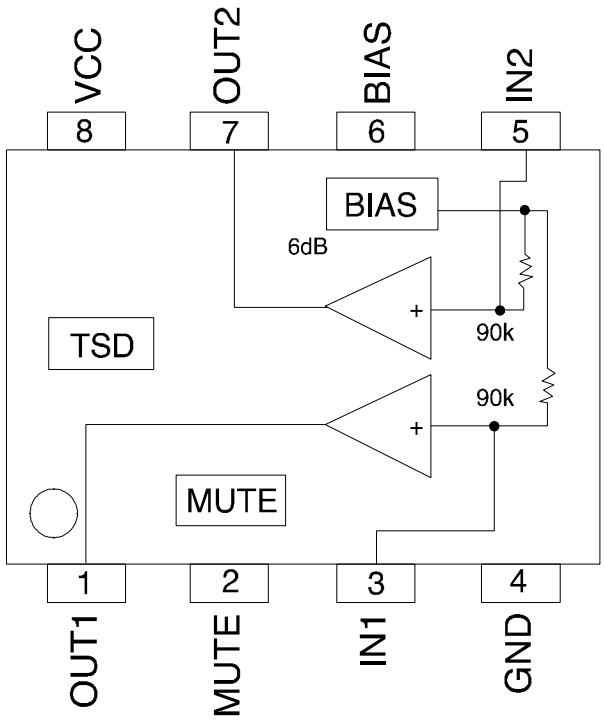
3-4-8 IC203(V53C16258HK25)



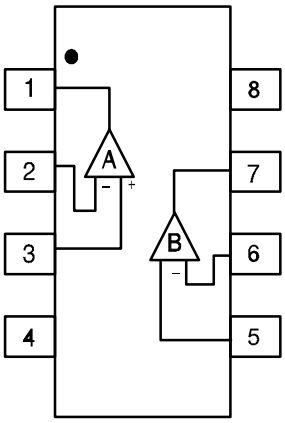
Pin Descriptions:

Name	Function
A_0-A_7	Address Inputs
$\overline{RAS}$	Row Address Strobe
$\overline{UCAS}$	Column Address Strobe/Upper Byte Control
$\overline{LCAS}$	Column Address Strobe/Lower Byte Control
$\overline{WE}$	Write Enable
$\overline{OE}$	Output Enable
DQ_0-DQ_{15}	Data Inputs/Outputs
Vcc	+5V Power Supply
Vss	Ground
NC	No Connection

3-4-9 IC701(BH3543F)

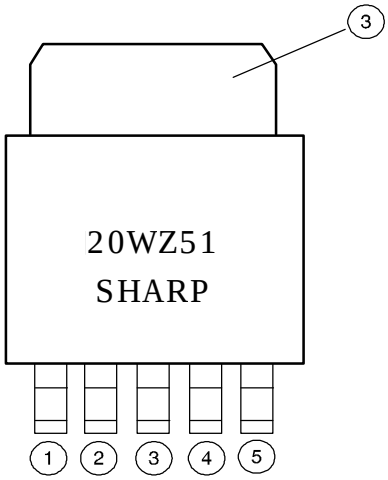


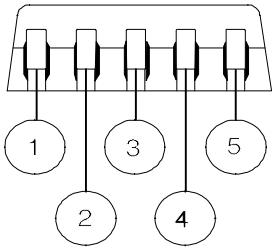
3 - 4 - 10 IC111,IC460(NJM3414)



PIN FUNCTION
1. A OUTPUT
2. A - INPUT
3. A+INPUT
4. GND
5. B+INPUT
6. B - INPUT
7. B OUTPUT
8. V+

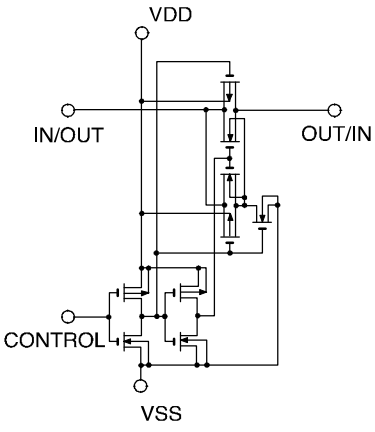
3 - 4 - 11 IC801, IC802(PQ20WZ51)

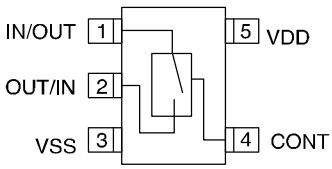




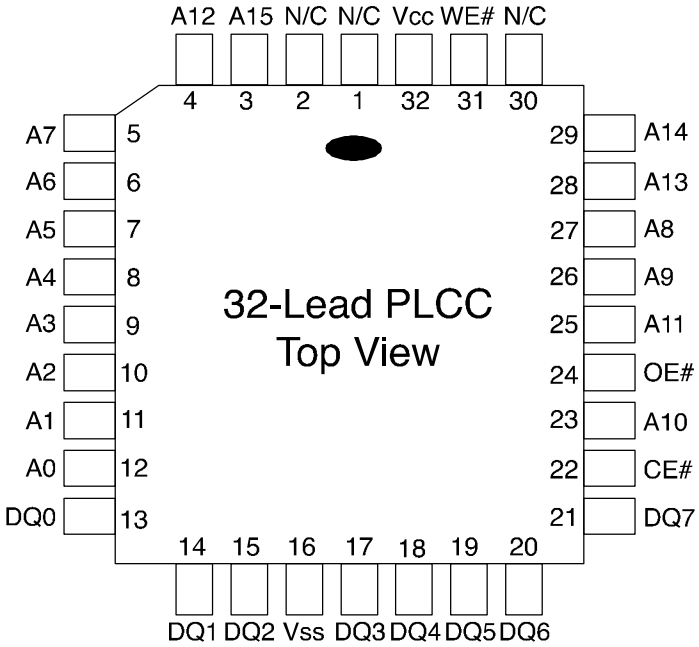
¨ç DC INPUT(Vin)
¨è ON/OFF CONTROL(Vc)
¨é DC OUTPUT(Vo)
¨ê Output Voltage Adjustment(Vadj)
¨ë GND

3 - 4 - 12 IC102(TC4S66F)

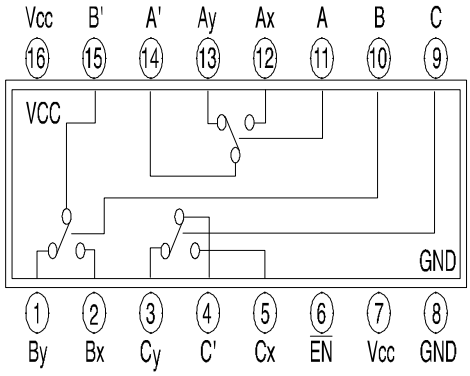




3-4-13 IC302(SST29EE512-70)



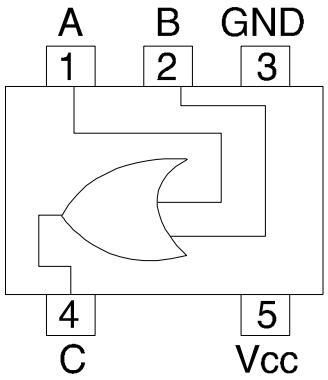
3-4-14 IC110(74HC4053)



Truth Table

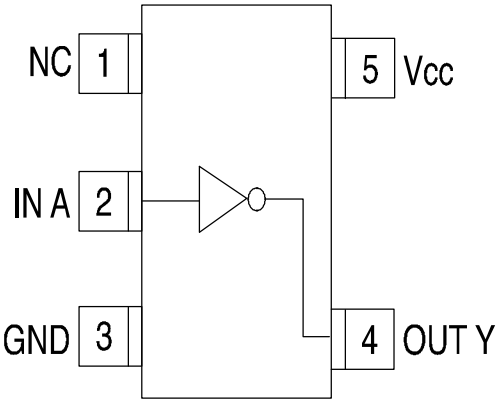
Input				"ON" Channels		
$\overline{EN}$	C	B	A	C'	B'	A'
H	X	X	X	None	None	None
L	L	L	L	Cx	Bx	Ax
L	L	L	H	Cx	Bx	Ay
L	L	H	L	Cx	By	Ax
L	L	H	H	Cx	By	Ay
L	H	L	L	Cy	Bx	Ax
L	H	L	H	Cy	Bx	Ay
L	H	H	L	Cy	By	Ax
L	H	H	H	Cy	By	Ay

3-4-15 IC303(TC7S32F)



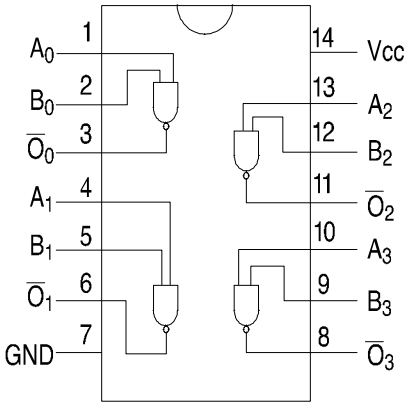
A	B	C
L	L	L
L	H	H
H	L	H
H	H	H

3-4-16 IC255(TC7SU04F)



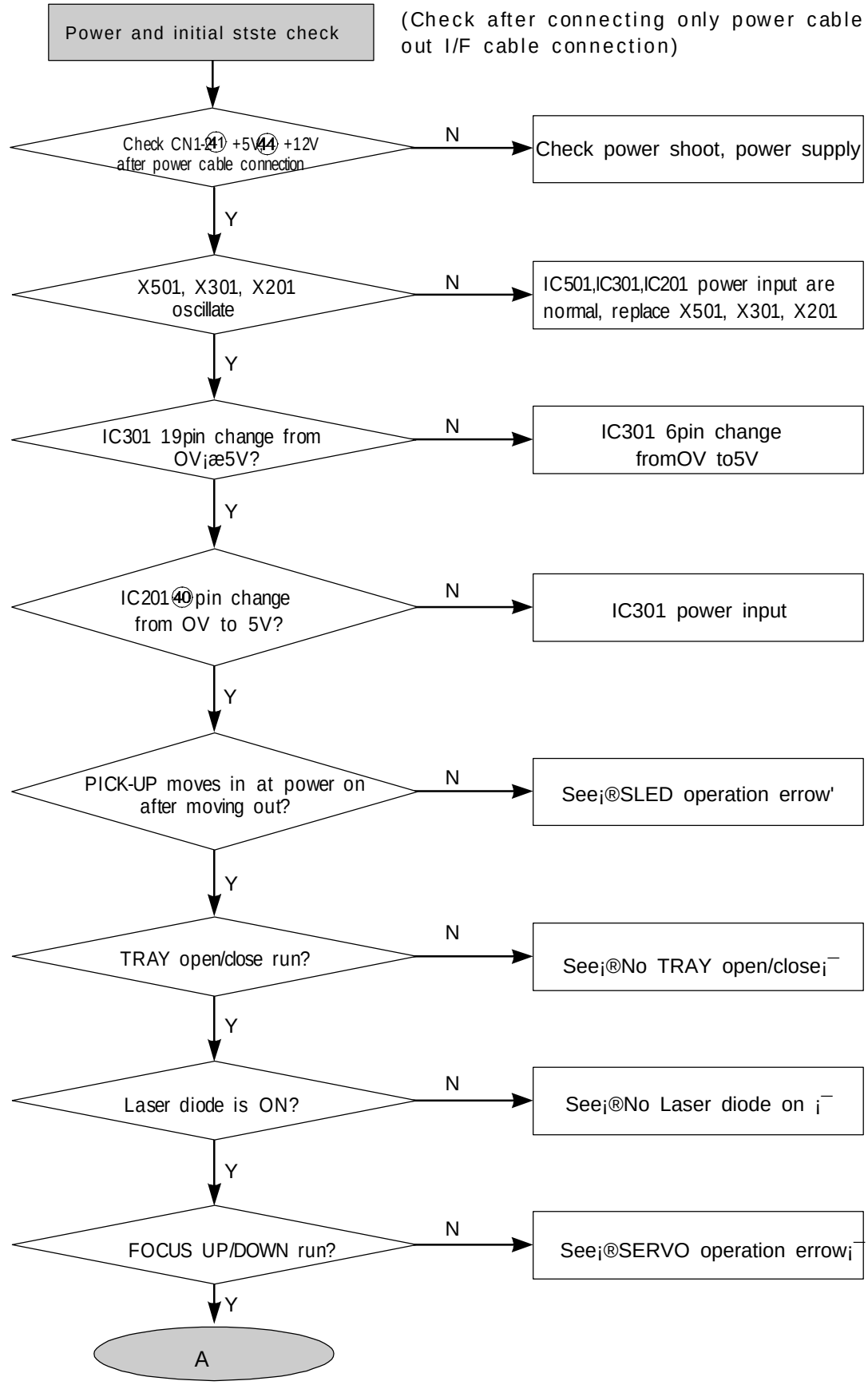
A	Y
L	H
H	L

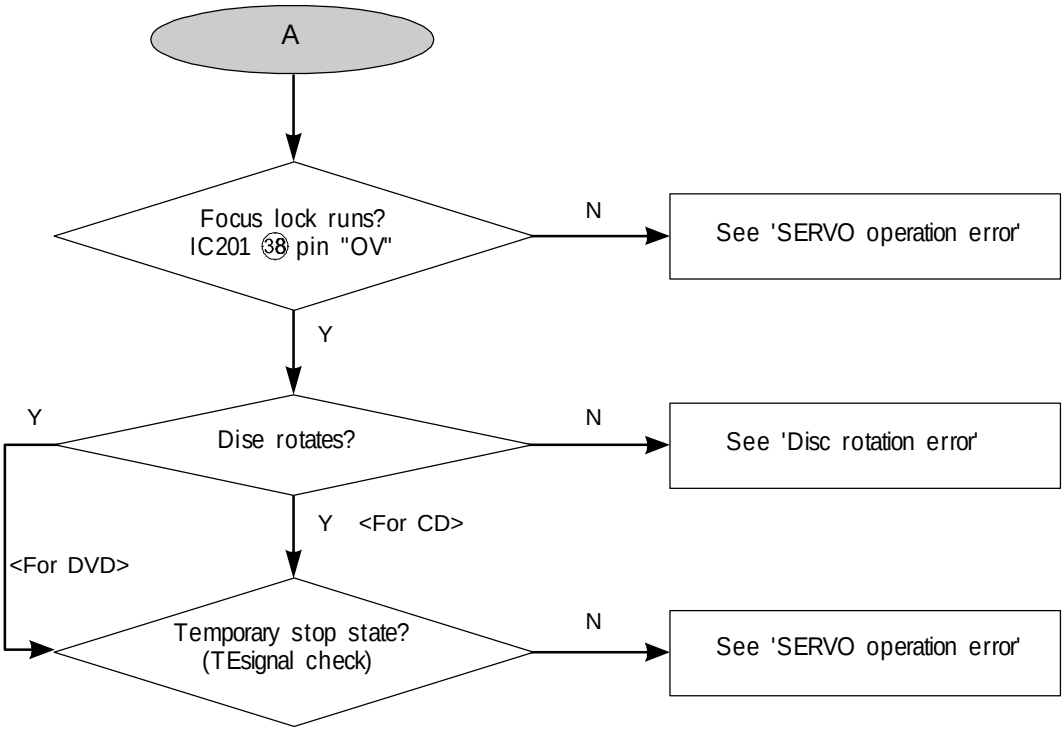
3-4-17 IC310(74VHCT00)

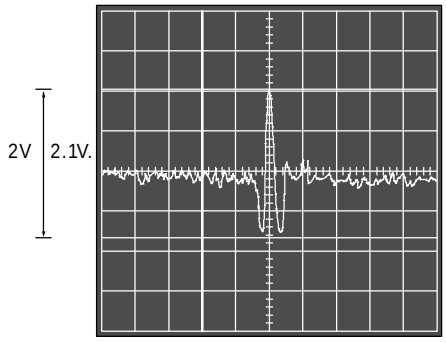


A	B	O
L	L	H
L	H	H
H	L	H
H	H	L

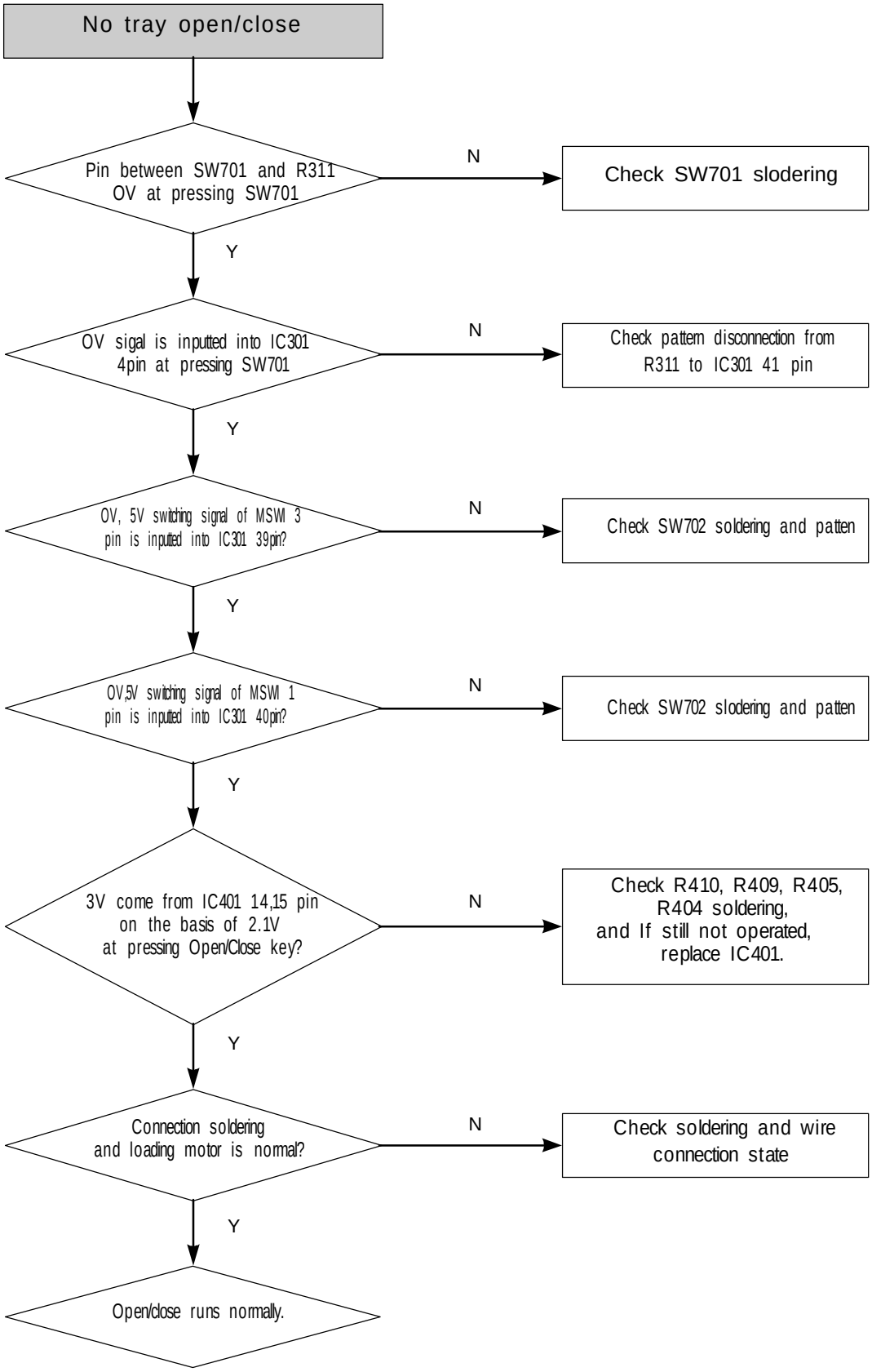
3-3. Trouble shooting

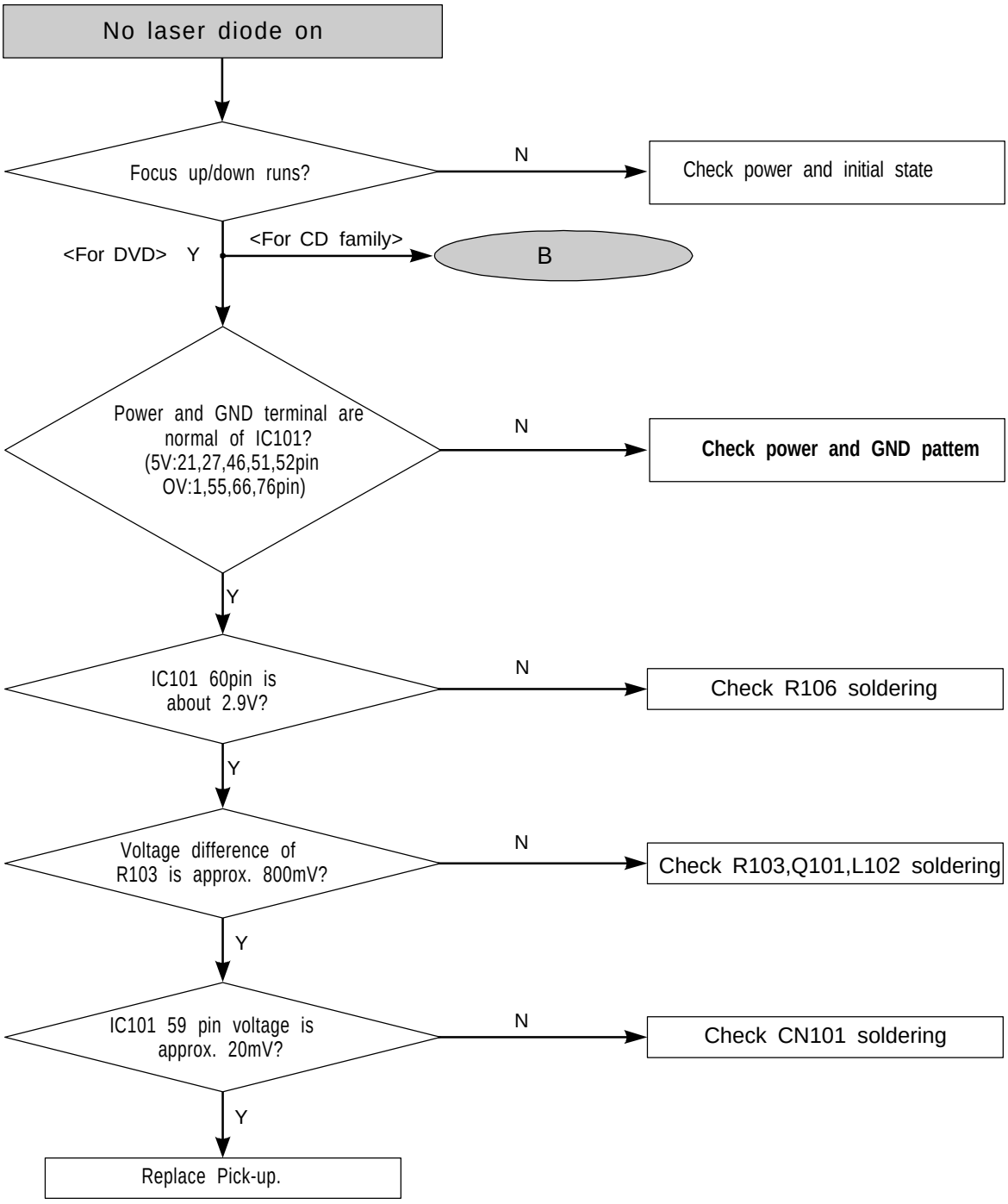


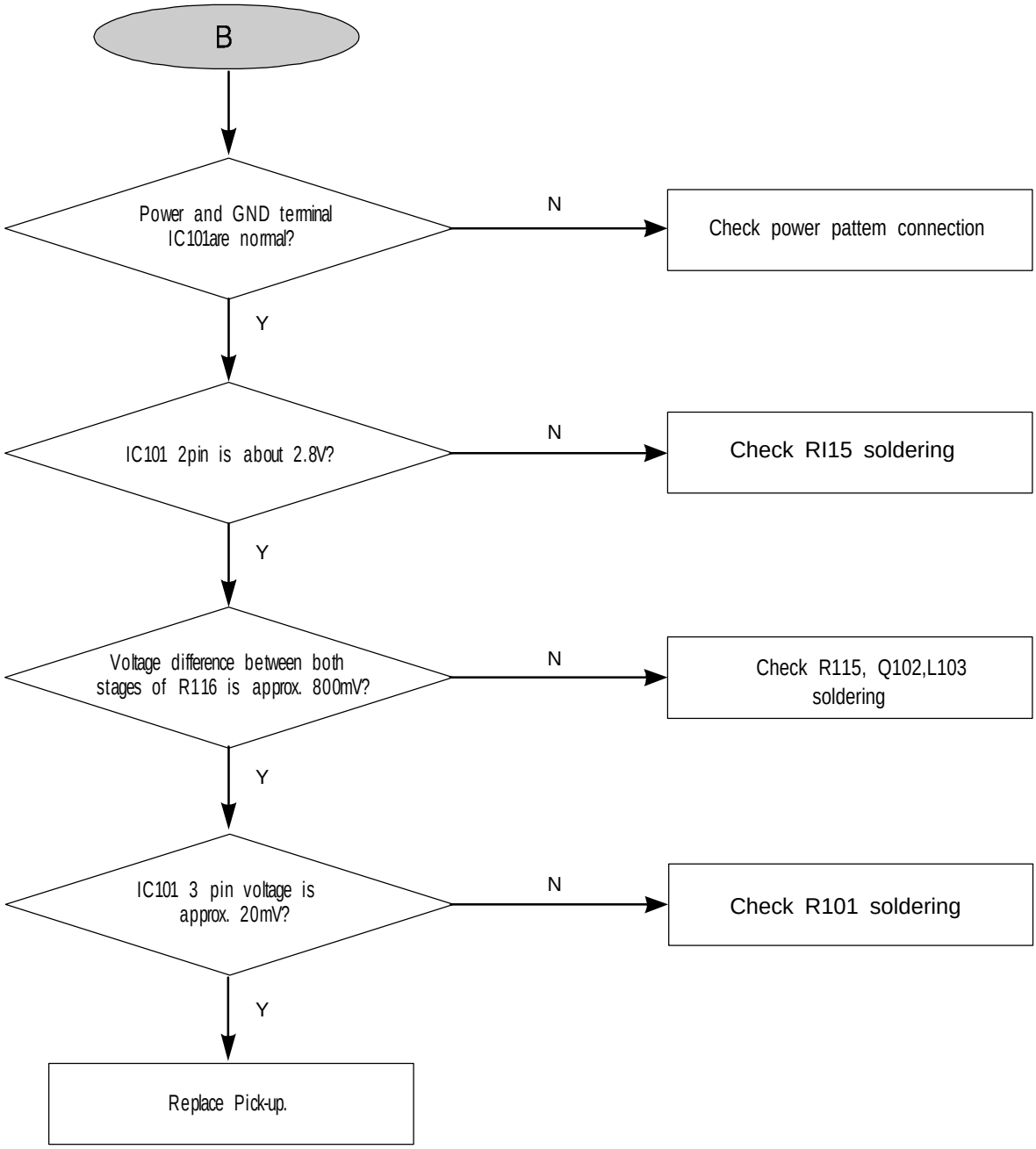


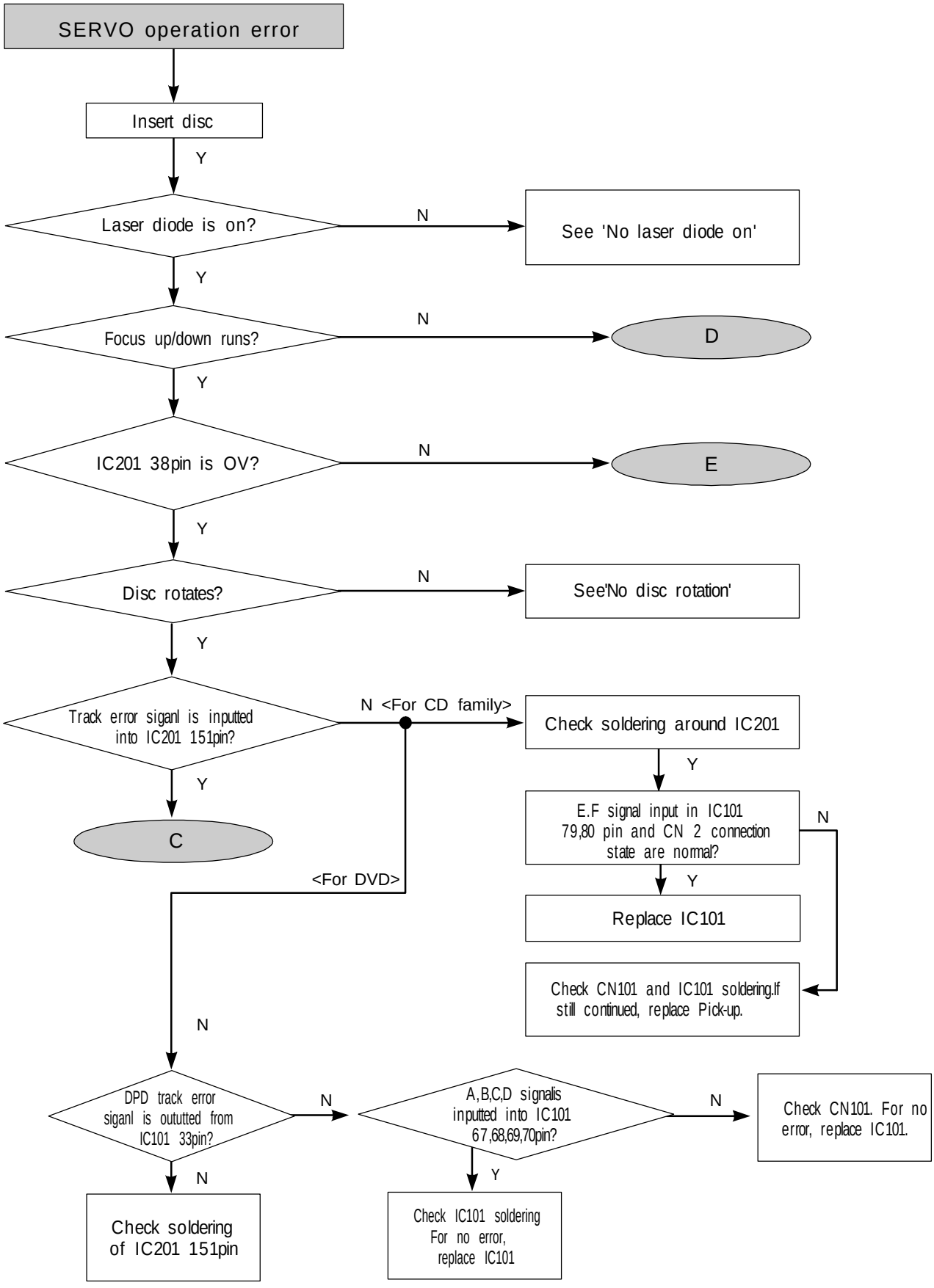


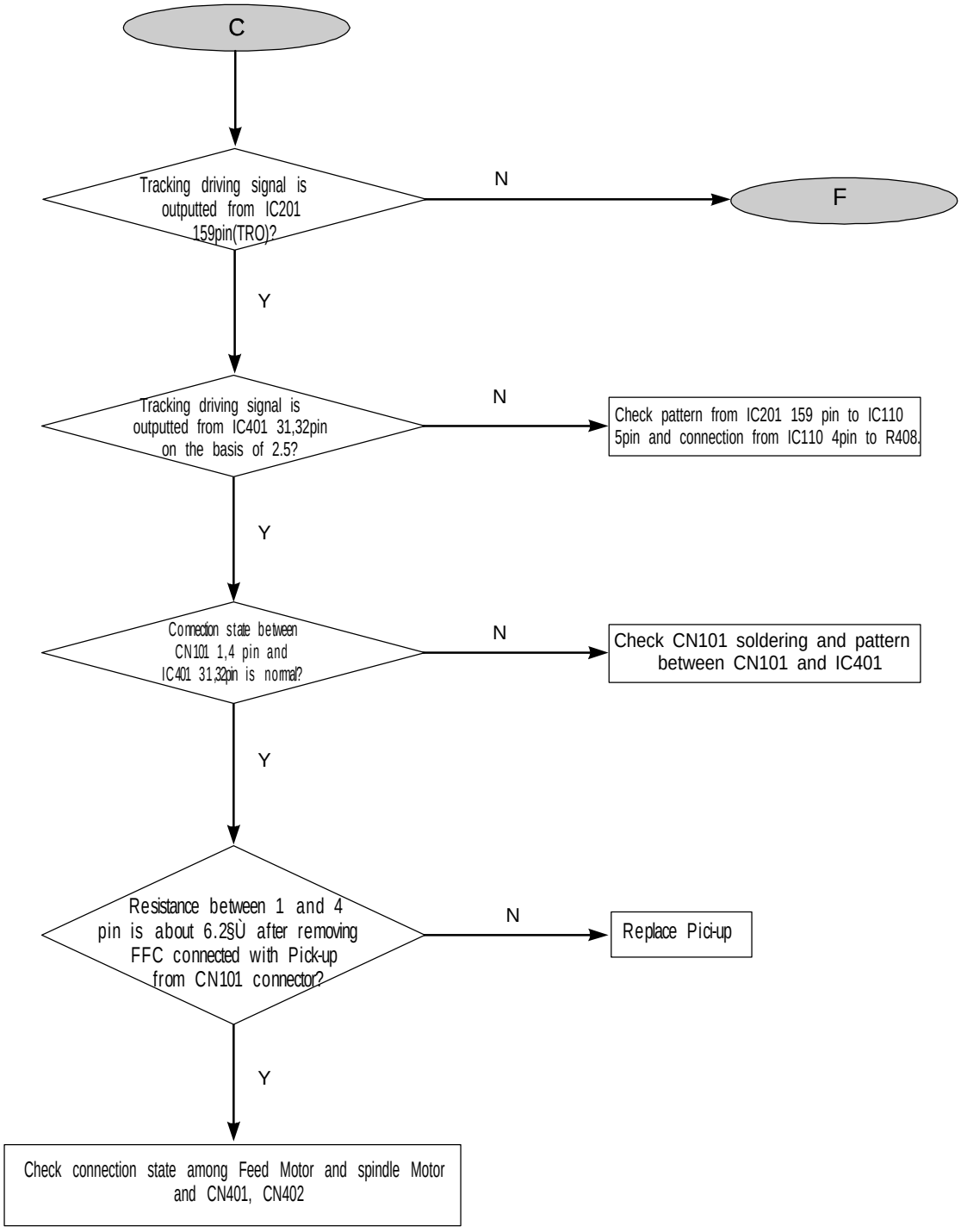
<TE signal at track jump>
(Temporary half state for DVD)

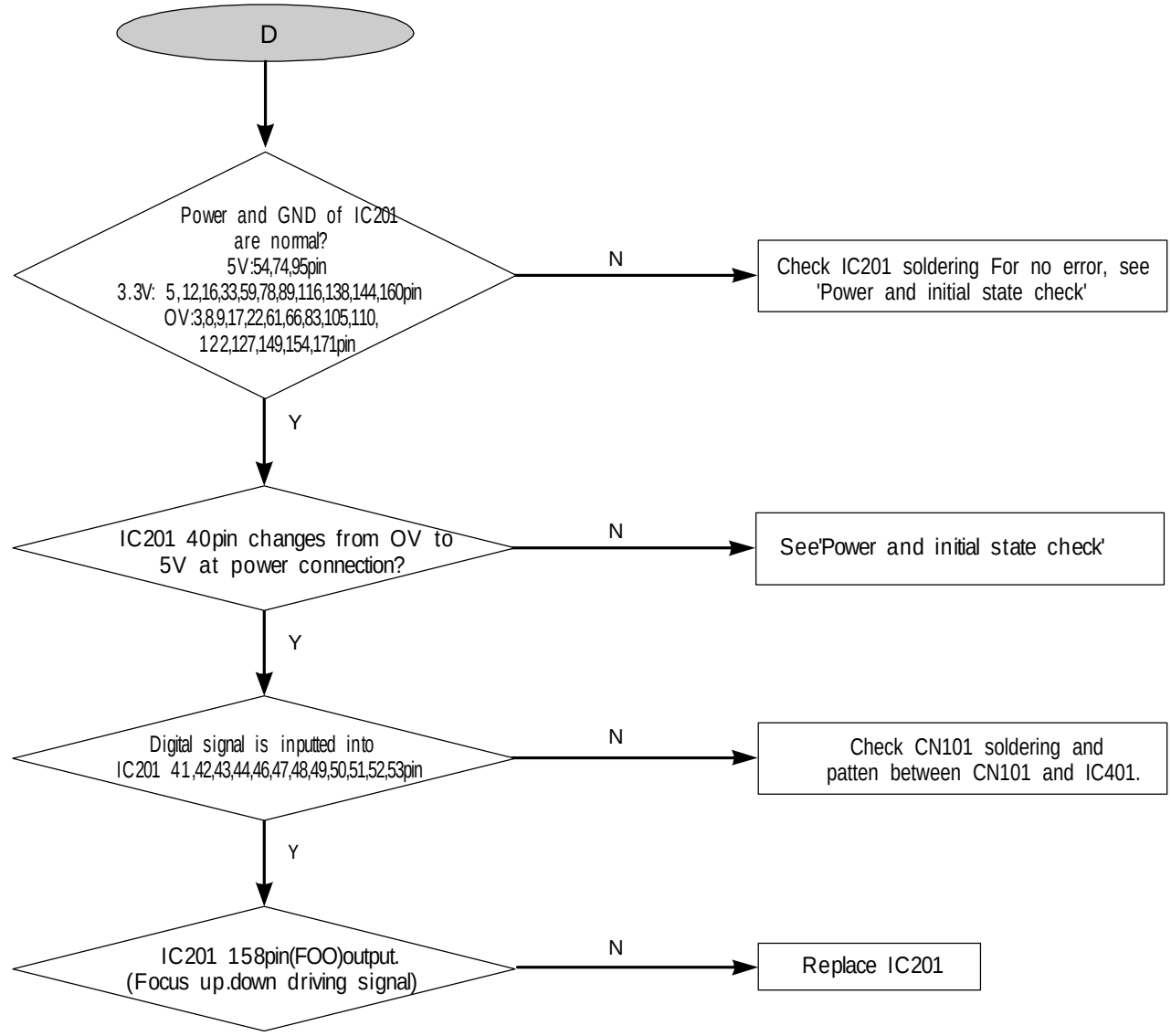

No tray open/close
Pin between SW701 and R311 OV at pressing SW701
N
Check SW701 slodering
Y
OV sigal is inputted into IC301 4pin at pressing SW701
N
Check pattern disconnection from R311 to IC301 41 pin
Y
OV, 5V switching signal of MSWI 3 pin is inputted into IC301 39pin?
N
Check SW702 soldering and patten
Y
OV,5V switching signal of MSWI 1 pin is inputted into IC301 40pin?
N
Check SW702 slodering and patten
Y
3V come from IC401 14,15 pin on the basis of 2.1V at pressing Open/Close key?
N
Check R410, R409, R405, R404 soldering, and If still not operated, replace IC401.
Y
Connection soldering and loading motor is normal?
N
Check soldering and wire connection state
Y
Open/close runs normally.

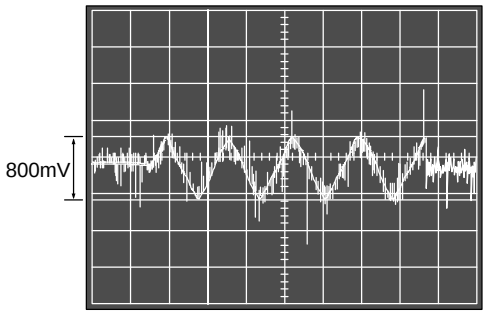

No laser diode on
Focus up/down runs?
N
Check power and initial state
<For DVD> Y
<For CD family>
B
Power and GND terminal are normal of IC101? (5V:21,27,46,51,52pin OV:1,55,66,76pin)
N
Check power and GND pattem
Y
IC101 60pin is about 2.9V?
N
Check R106 soldering
Y
Voltage difference of R103 is approx. 800mV?
N
Check R103,Q101,L102 soldering
Y
IC101 59 pin voltage is approx. 20mV?
N
Check CN101 soldering
Y
Replace Pick-up.


B
Power and GND terminal IC101are normal?
N
Check power pattem connection
Y
IC101 2pin is about 2.8V?
N
Check RI15 soldering
Y
Voltage difference between both stages of R116 is approx. 800mV?
N
Check R115, Q102,L103 soldering
Y
IC101 3 pin voltage is approx. 20mV?
N
Check R101 soldering
Y
Replace Pick-up.


SERVO operation error
Insert disc
Y
Laser diode is on?
N
See 'No laser diode on'
Y
Focus up/down runs?
N
D
Y
IC201 38pin is OV?
N
E
Y
Disc rotates?
N
See'No disc rotation'
Y
Track error siganl is inputted into IC201 151pin?
N <For CD family>
Check soldering around IC201
Y
E.F signal input in IC101 79,80 pin and CN 2 connection state are normal?
N
Y
Replace IC101
Check CN101 and IC101 soldering.If still continued, replace Pick-up.
Y
C
<For DVD>
N
DPD track error siganl is oututted from IC101 33pin?
N
A,B,C,D signalis inputted into IC101 67,68,69,70pin?
N
Check CN101. For no error, replace IC101.
N
Y
Check soldering of IC201 151pin
Check IC101 soldering For no error, replace IC101

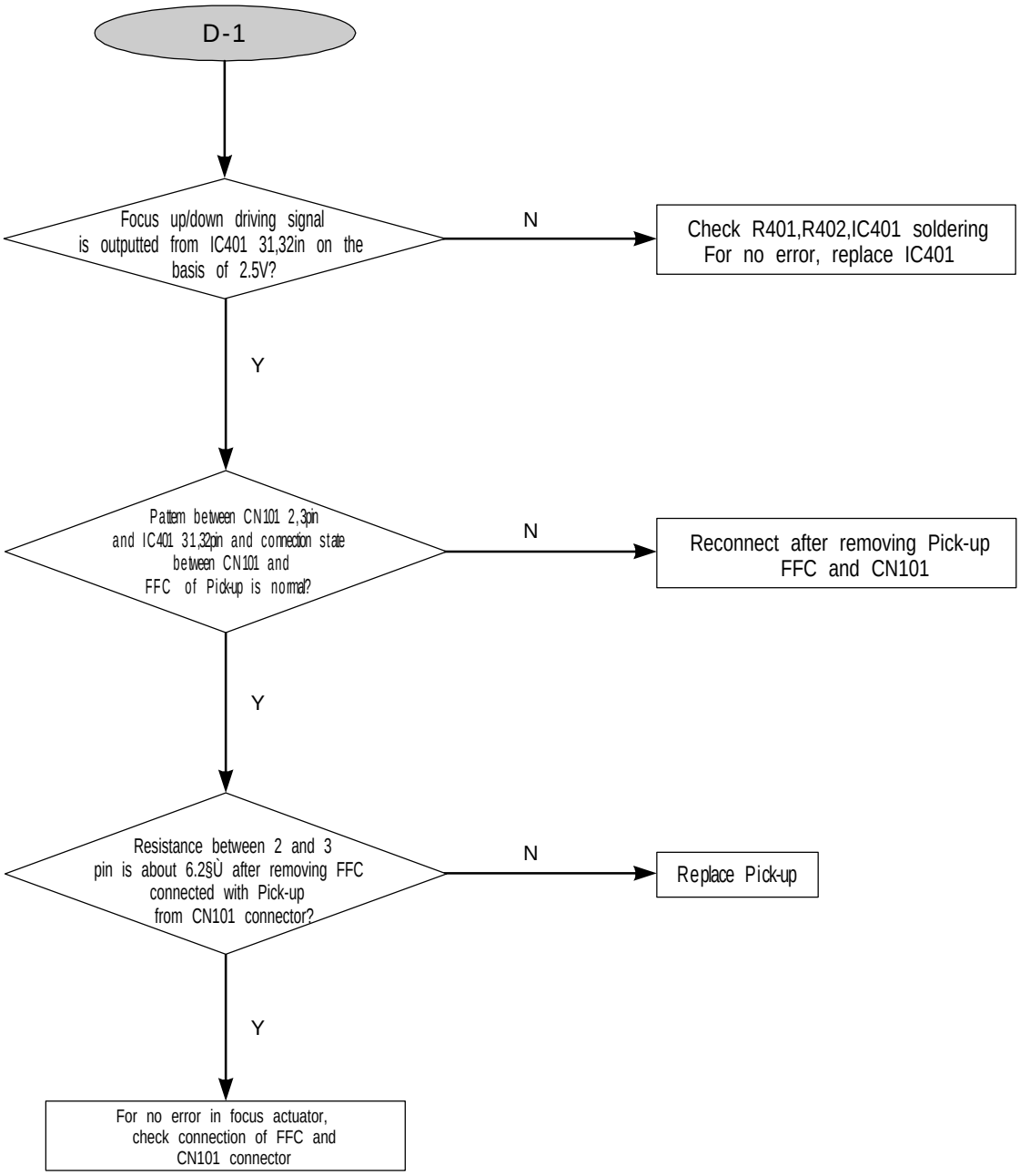

C
Tracking driving signal is outputted from IC201 159pin(TRO)?
N
F
Y
Tracking driving signal is outputted from IC401 31,32pin on the basis of 2.5?
N
Check pattern from IC201 159 pin to IC110 5pin and connection from IC110 4pin to R408.
Y
Connection state between CN101 1,4 pin and IC401 31,32pin is normal?
N
Check CN101 soldering and pattern between CN101 and IC401
Y
Resistance between 1 and 4 pin is about 6.2ÙÙ after removing FFC connected with Pick-up from CN101 connector?
N
Replace Pici-up
Y
Check connection state among Feed Motor and spindle Motor and CN401, CN402

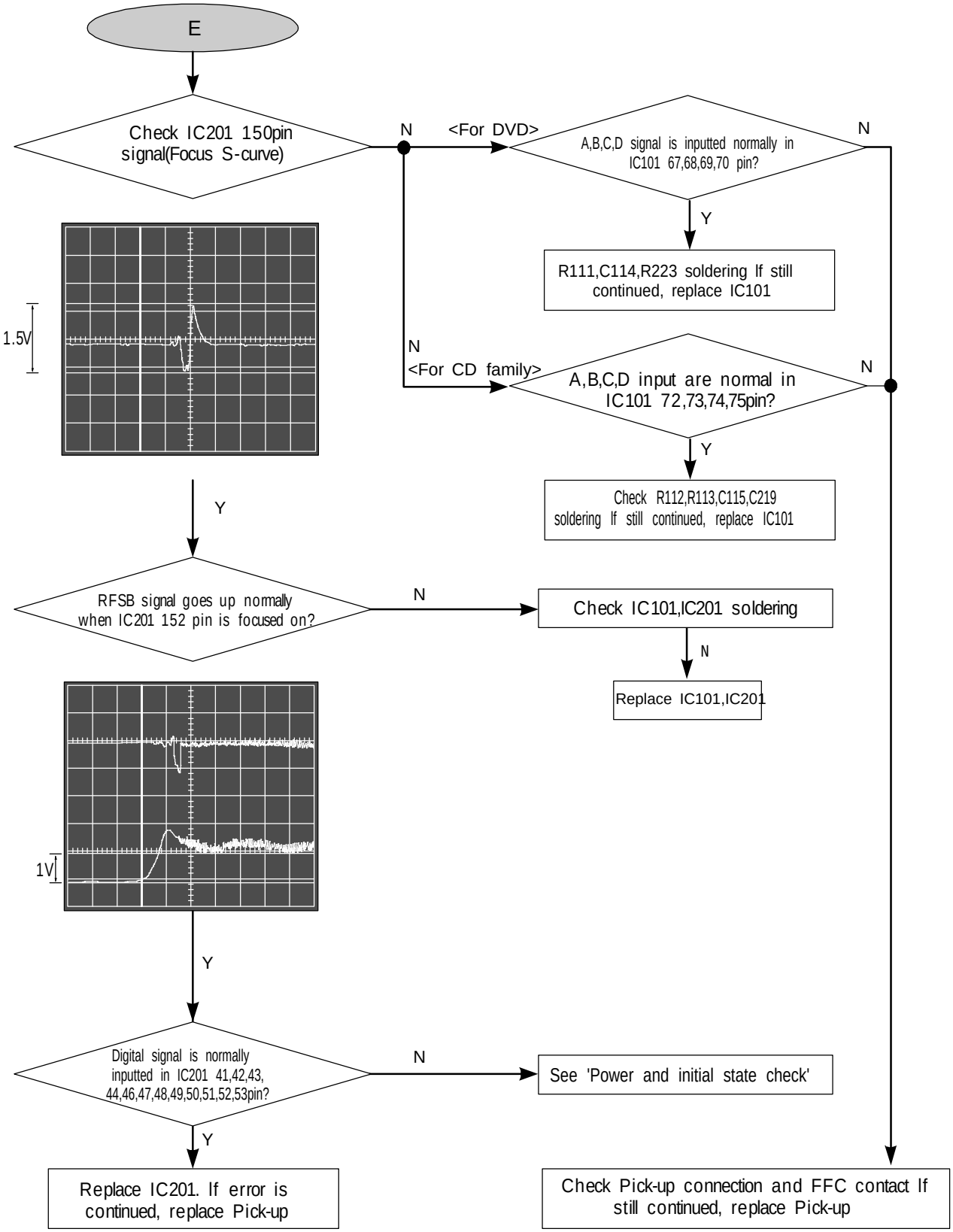

D
Power and GND of IC201 are normal?
5V:54,74,95pin
3.3V: 5,12,16,33,59,78,89,116,138,144,160pin
OV:3,8,9,17,22,61,66,83,105,110,
122,127,149,154,171pin
N
Check IC201 soldering For no error, see 'Power and initial state check'
Y
IC201 40pin changes from OV to 5V at power connection?
N
See'Power and initial state check'
Y
Digital signal is inputted into IC201 41,42,43,44,46,47,48,49,50,51,52,53pin
N
Check CN101 soldering and patten between CN101 and IC401.
Y
IC201 158pin(FOO)output. (Focus up.down driving signal)
N
Replace IC201

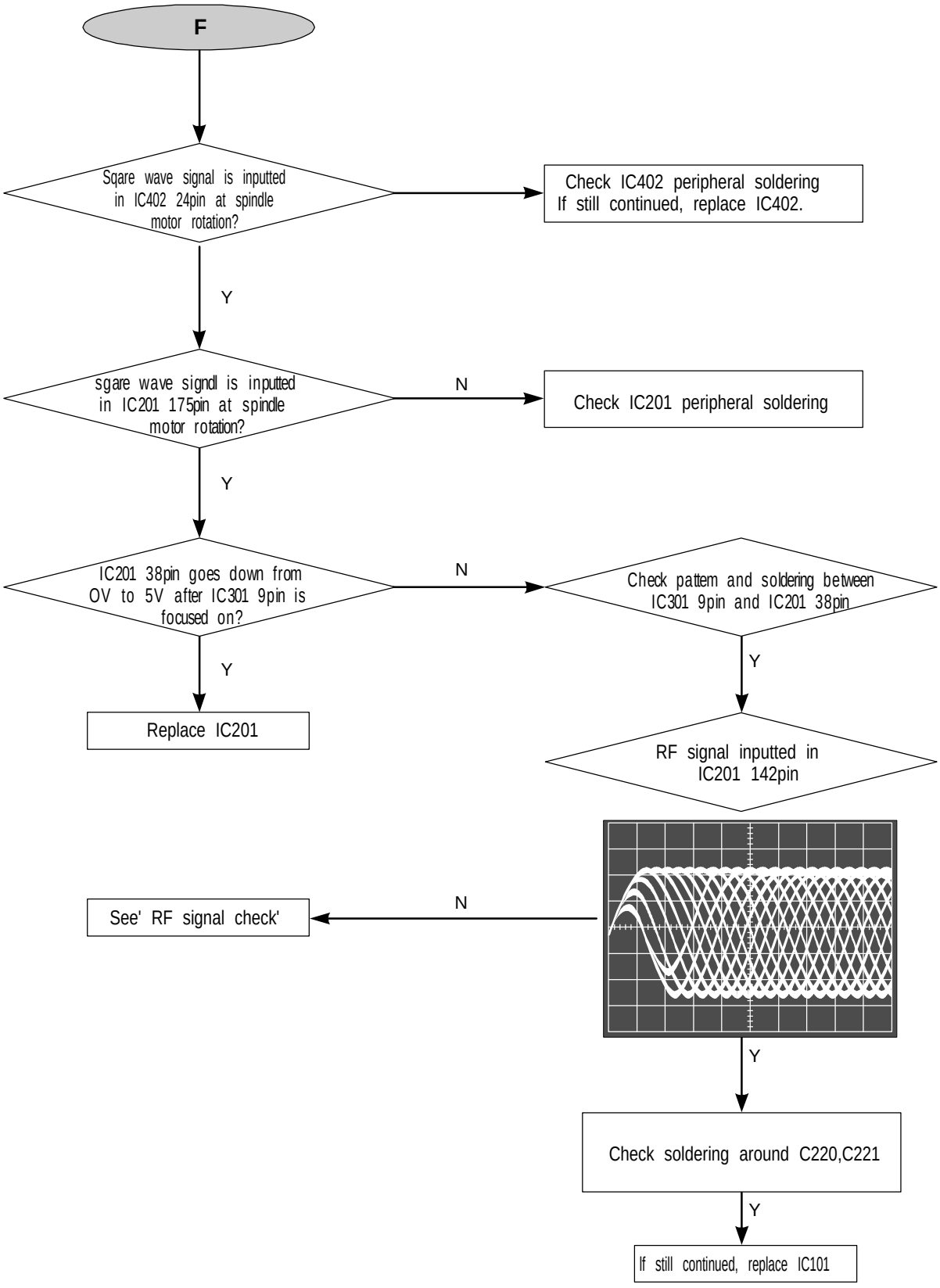

800mV

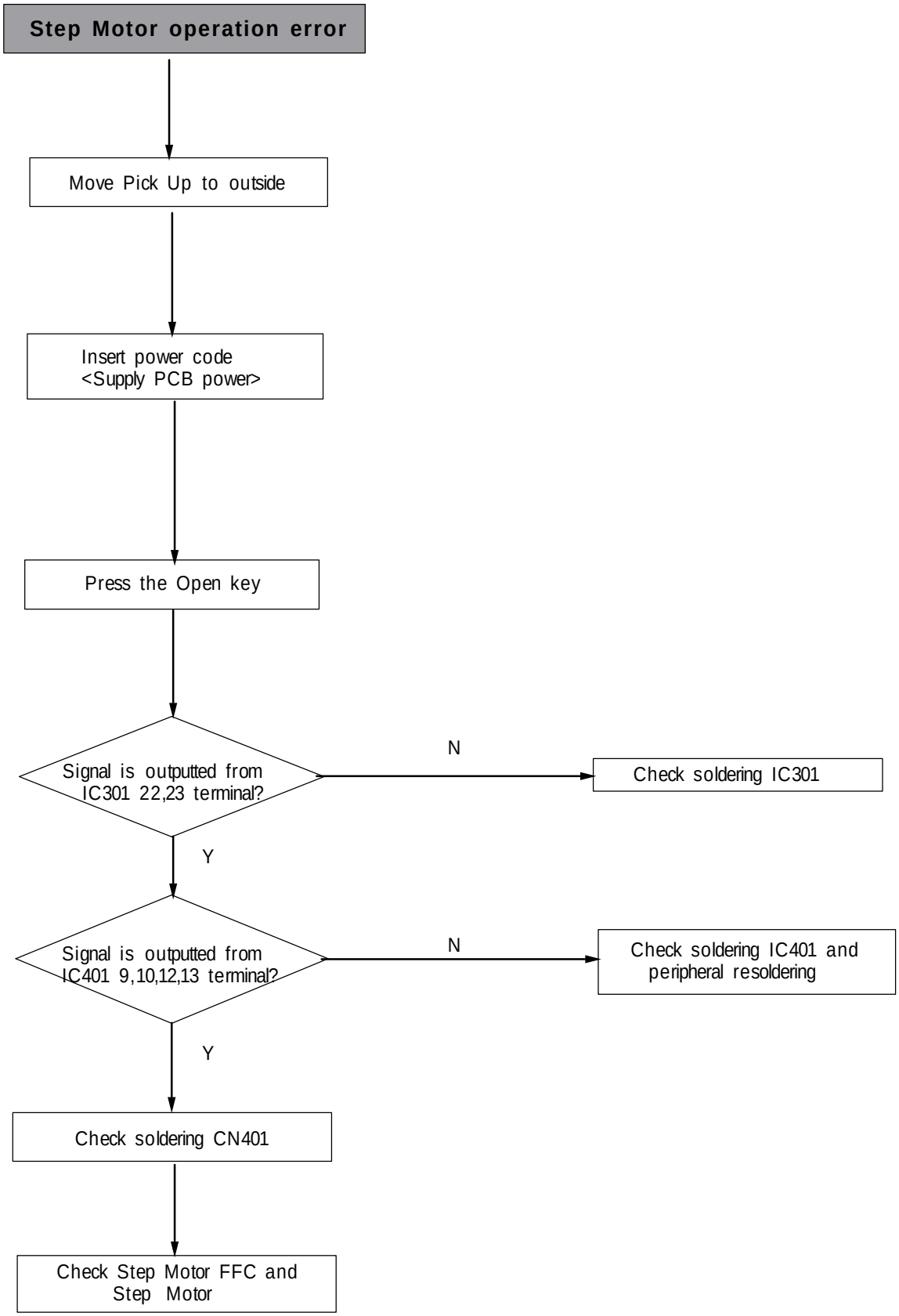
Y

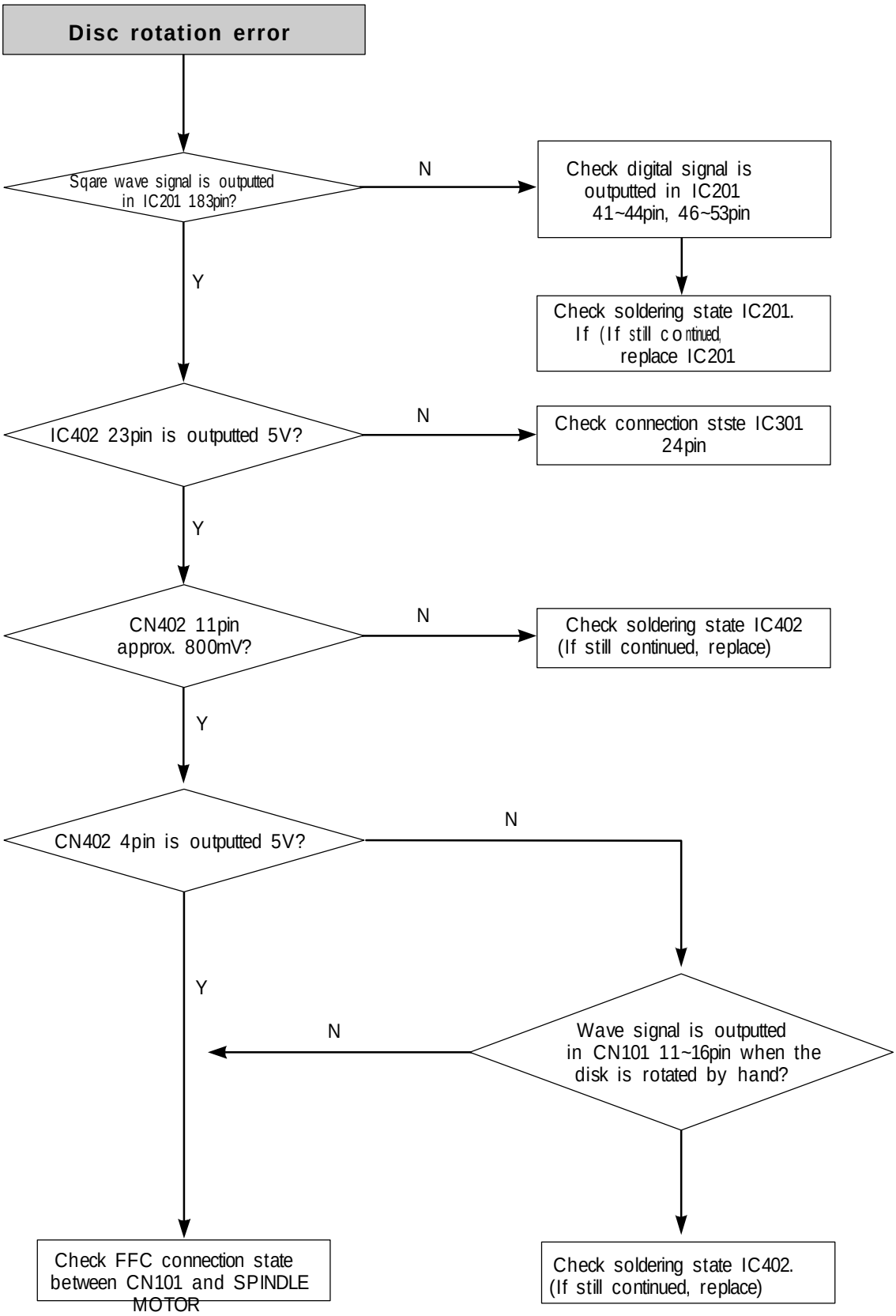
D-1

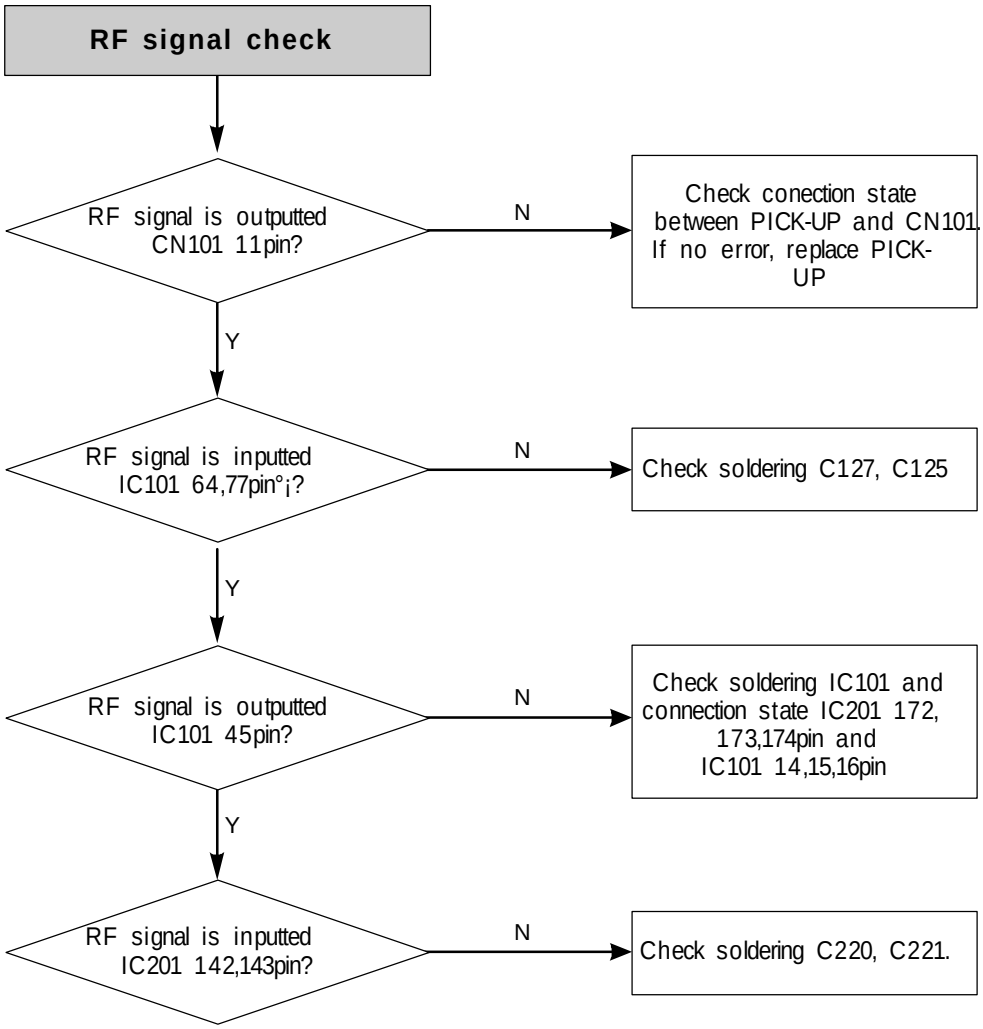

D-1
Focus up/down driving signal is outputted from IC401 31,32in on the basis of 2.5V?
N
Check R401,R402,IC401 soldering For no error, replace IC401
Y
Pattern between CN101 2,3pin and IC401 31,32pin and connection state between CN101 and FFC of Pick-up is normal?
N
Reconnect after removing Pick-up FFC and CN101
Y
Resistance between 2 and 3 pin is about 6.2ŠÙ after removing FFC connected with Pick-up from CN101 connector?
N
Replace Pick-up
Y
For no error in focus actuator, check connection of FFC and CN101 connector

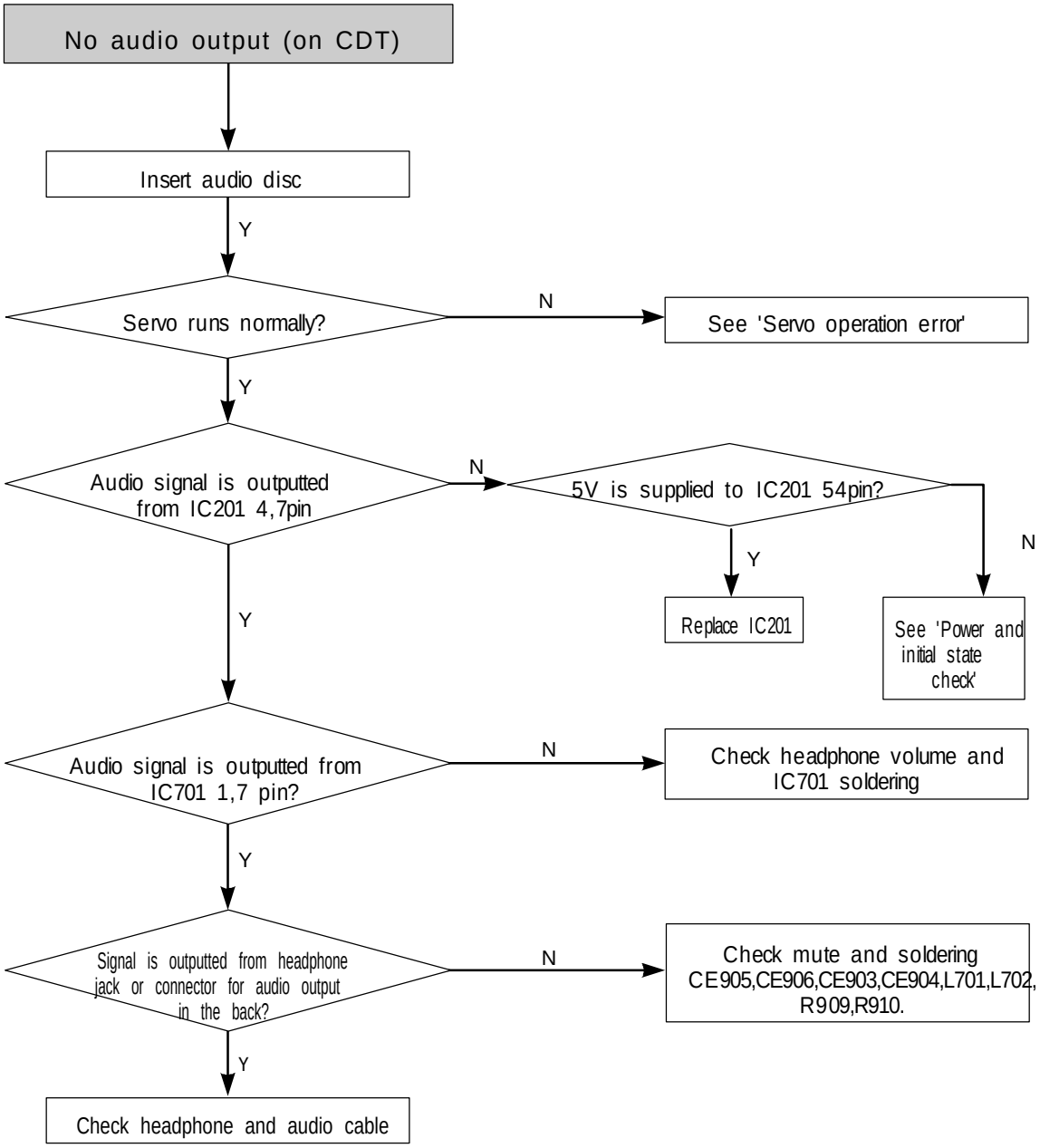

E
Check IC201 150pin signal(Focus S-curve)
N
<For DVD>
A,B,C,D signal is inputted normally in IC101 67,68,69,70 pin?
N
Y
R111,C114,R223 soldering If still continued, replace IC101
1.5V
N
<For CD family>
A,B,C,D input are normal in IC101 72,73,74,75pin?
N
Y
Check R112,R113,C115,C219 soldering If still continued, replace IC101
Y
RFSB signal goes up normally when IC201 152 pin is focused on?
N
Check IC101,IC201 soldering
N
Replace IC101,IC201
1V
Y
Digital signal is normally inputted in IC201 41,42,43, 44,46,47,48,49,50,51,52,53pin?
N
See 'Power and initial state check'
Y
Replace IC201. If error is continued, replace Pick-up
Check Pick-up connection and FFC contact If still continued, replace Pick-up

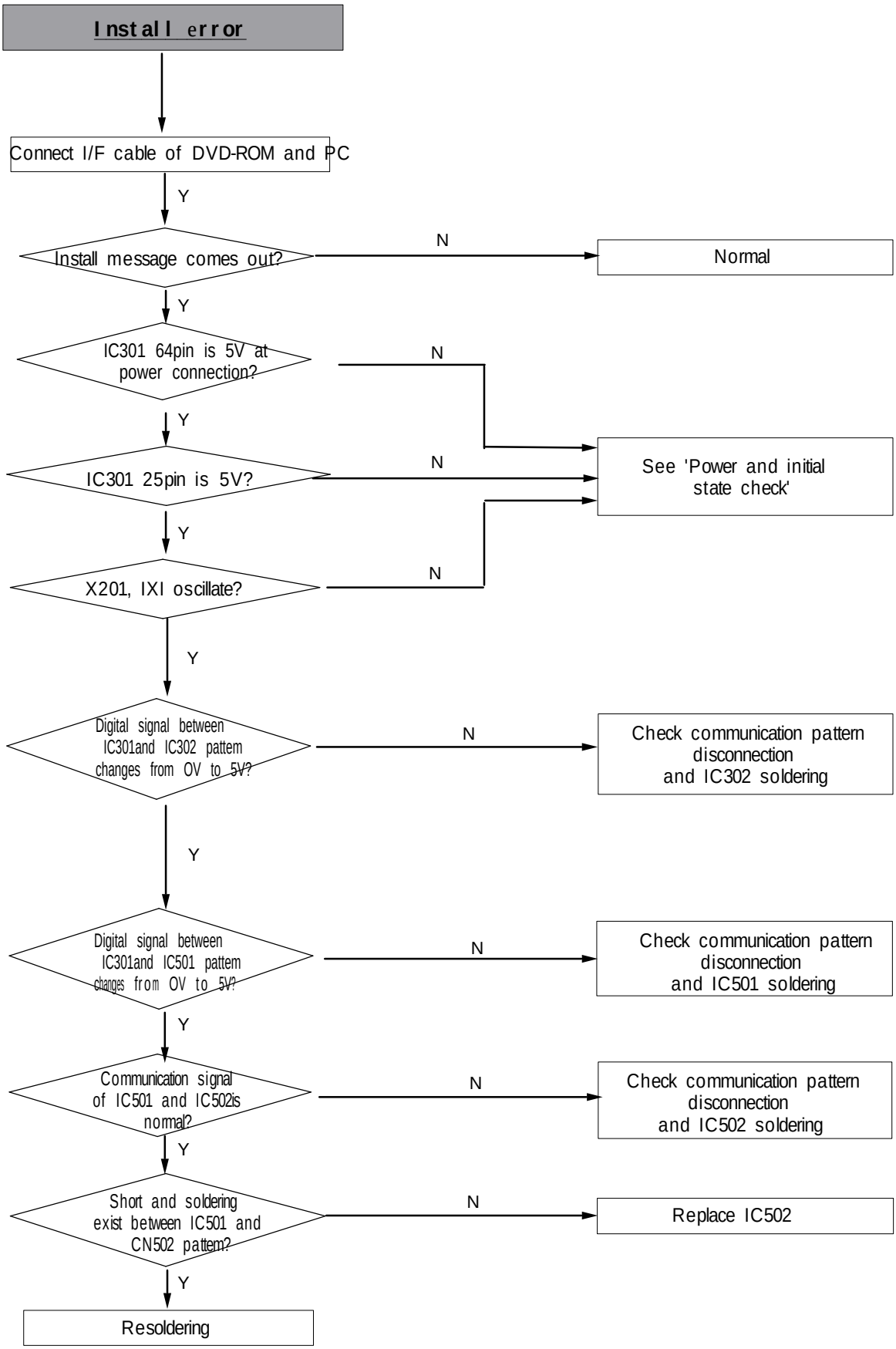

F
Sqare wave signal is inputted in IC402 24pin at spindle motor rotation?
Check IC402 peripheral soldering If still continued, replace IC402.
Y
sgare wave signdl is inputted in IC201 175pin at spindle motor rotation?
N
Check IC201 peripheral soldering
Y
IC201 38pin goes down from OV to 5V after IC301 9pin is focused on?
N
Check pattem and soldering between IC301 9pin and IC201 38pin
Y
Y
Replace IC201
RF signal inputted in IC201 142pin
N
See' RF signal check'
Y
Check soldering around C220,C221
Y
If still continued, replace IC101


Step Motor operation error
Move Pick Up to outside
Insert power code
<Supply PCB power>
Press the Open key
Signal is outputted from
IC301 22,23 terminal?
N
Check soldering IC301
Y
Signal is outputted from
IC401 9,10,12,13 terminal?
N
Check soldering IC401 and
peripheral resoldering
Y
Check soldering CN401
Check Step Motor FFC and
Step Motor

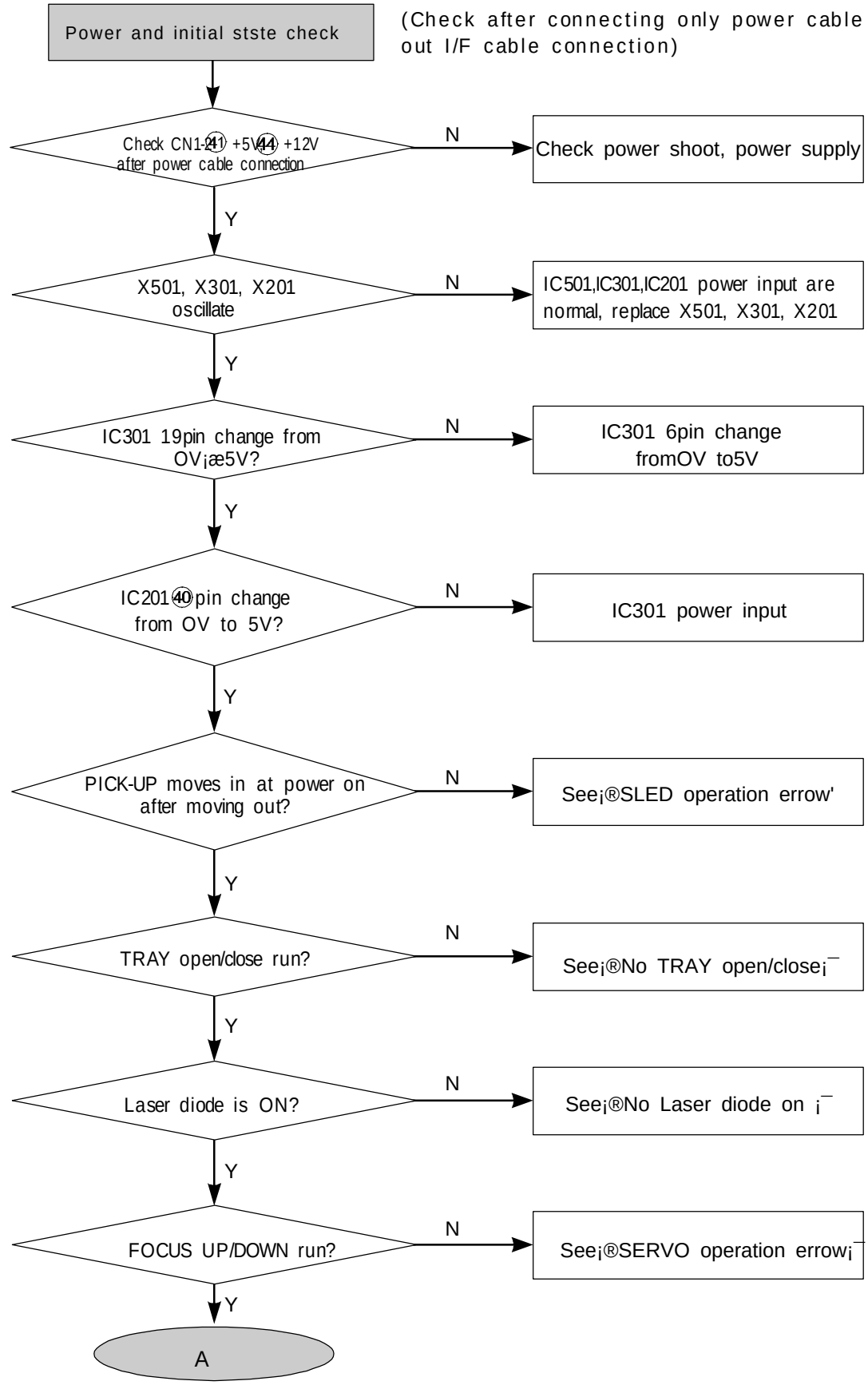

Disc rotation error
Sqare wave signal is outputted in IC201 183pin?
N
Check digital signal is outputted in IC201 41~44pin, 46~53pin
Y
Check soldering state IC201. If (If still continued, replace IC201
IC402 23pin is outputted 5V?
N
Check connection stste IC301 24pin
Y
CN402 11pin approx. 800mV?
N
Check soldering state IC402 (If still continued, replace)
Y
CN402 4pin is outputted 5V?
N
Y
N
Wave signal is outputted in CN101 11~16pin when the disk is rotated by hand?
Check FFC connection state between CN101 and SPINDLE MOTOR
Check soldering state IC402. (If still continued, replace)

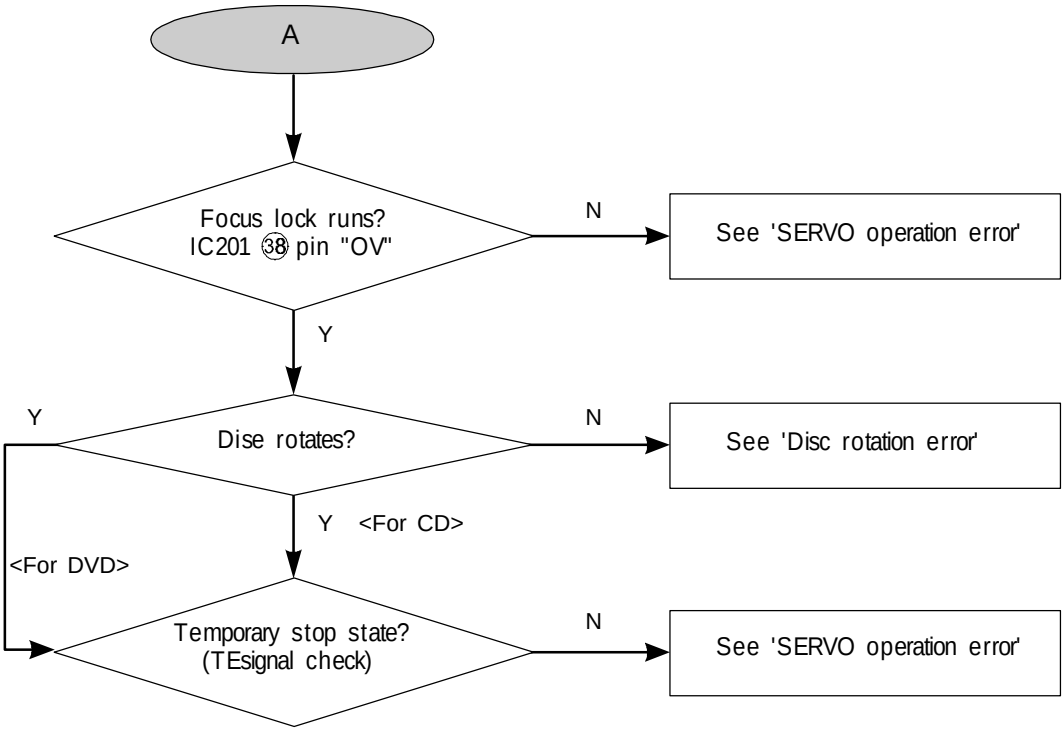

RF signal check
RF signal is outputted CN101 11pin?
N
Check conection state between PICK-UP and CN101. If no error, replace PICK-UP
Y
RF signal is inputted IC101 64,77pin°¡?
N
Check soldering C127, C125
Y
RF signal is outputted IC101 45pin?
N
Check soldering IC101 and connection state IC201 172, 173,174pin and IC101 14,15,16pin
Y
RF signal is inputted IC201 142,143pin?
N
Check soldering C220, C221.

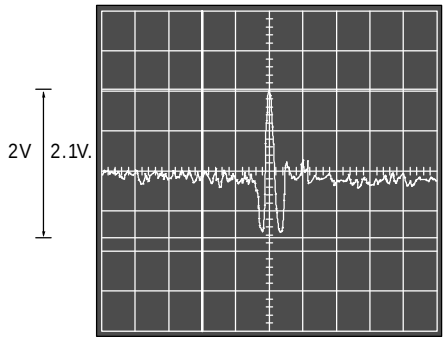

No audio output (on CDT)
Insert audio disc
Y
Servo runs normally?
N
See 'Servo operation error'
Y
Audio signal is outputted from IC201 4,7pin
N
5V is supplied to IC201 54pin?
Y
N
Replace IC201
See 'Power and initial state check'
Y
Audio signal is outputted from IC701 1,7 pin?
N
Check headphone volume and IC701 soldering
Y
Signal is outputted from headphone jack or connector for audio output in the back?
N
Check mute and soldering CE905,CE906,CE903,CE904,L701,L702, R909,R910.
Y
Check headphone and audio cable


Install error
Connect I/F cable of DVD-ROM and PC
Y
Install message comes out?
N
Normal
Y
IC301 64pin is 5V at power connection?
N
Y
IC301 25pin is 5V?
N
See 'Power and initial state check'
Y
X201, IXI oscillate?
N
Y
Digital signal between IC301and IC302 pattem changes from OV to 5V?
N
Check communication pattern disconnection and IC302 soldering
Y
Digital signal between IC301and IC501 pattem changes from OV to 5V?
N
Check communication pattern disconnection and IC501 soldering
Y
Communication signal of IC501 and IC502is normal?
N
Check communication pattern disconnection and IC502 soldering
Y
Short and soldering exist between IC501 and CN502 pattem?
N
Replace IC502
Y
Resoldering

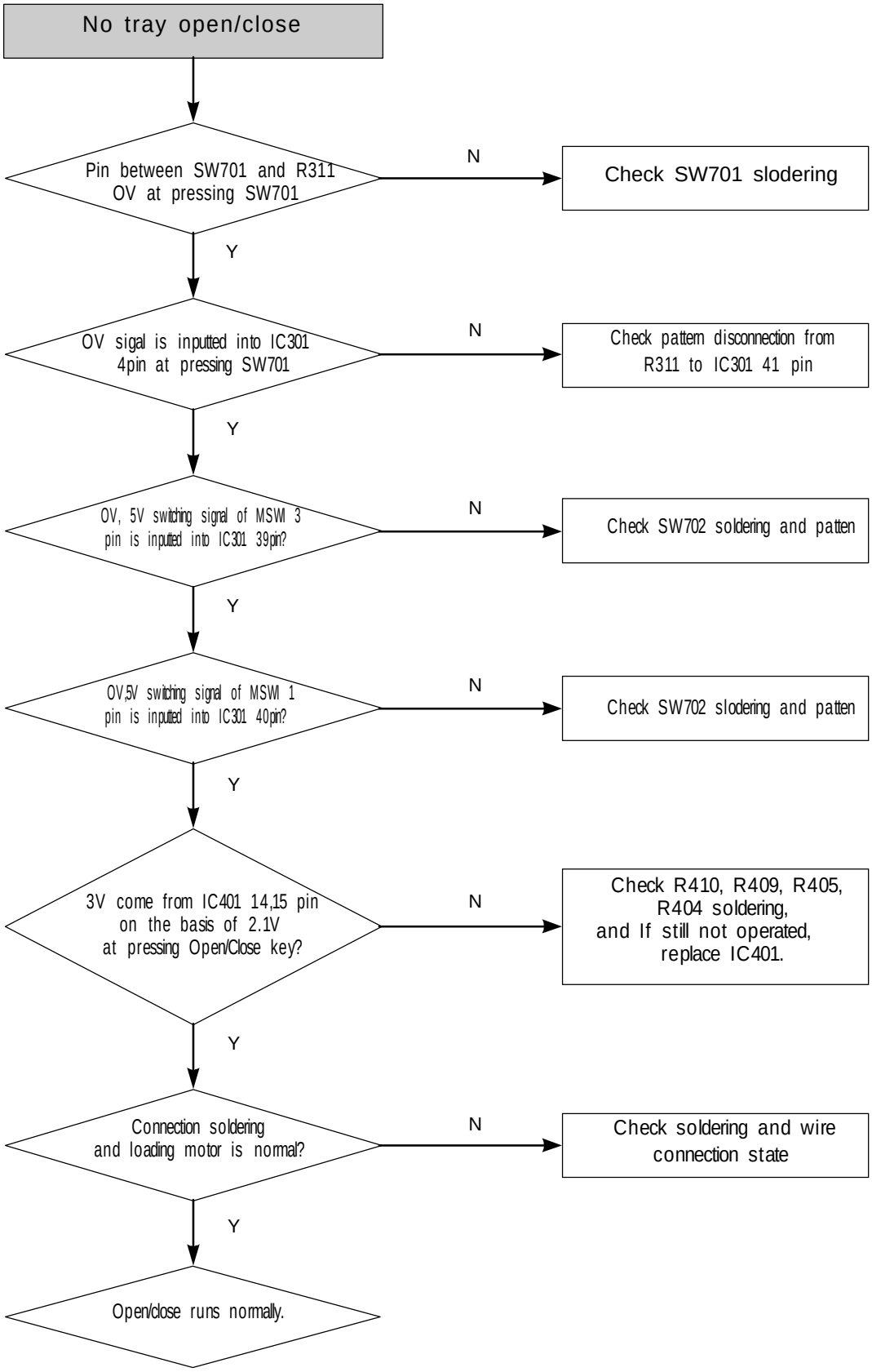
3-3. Trouble shooting

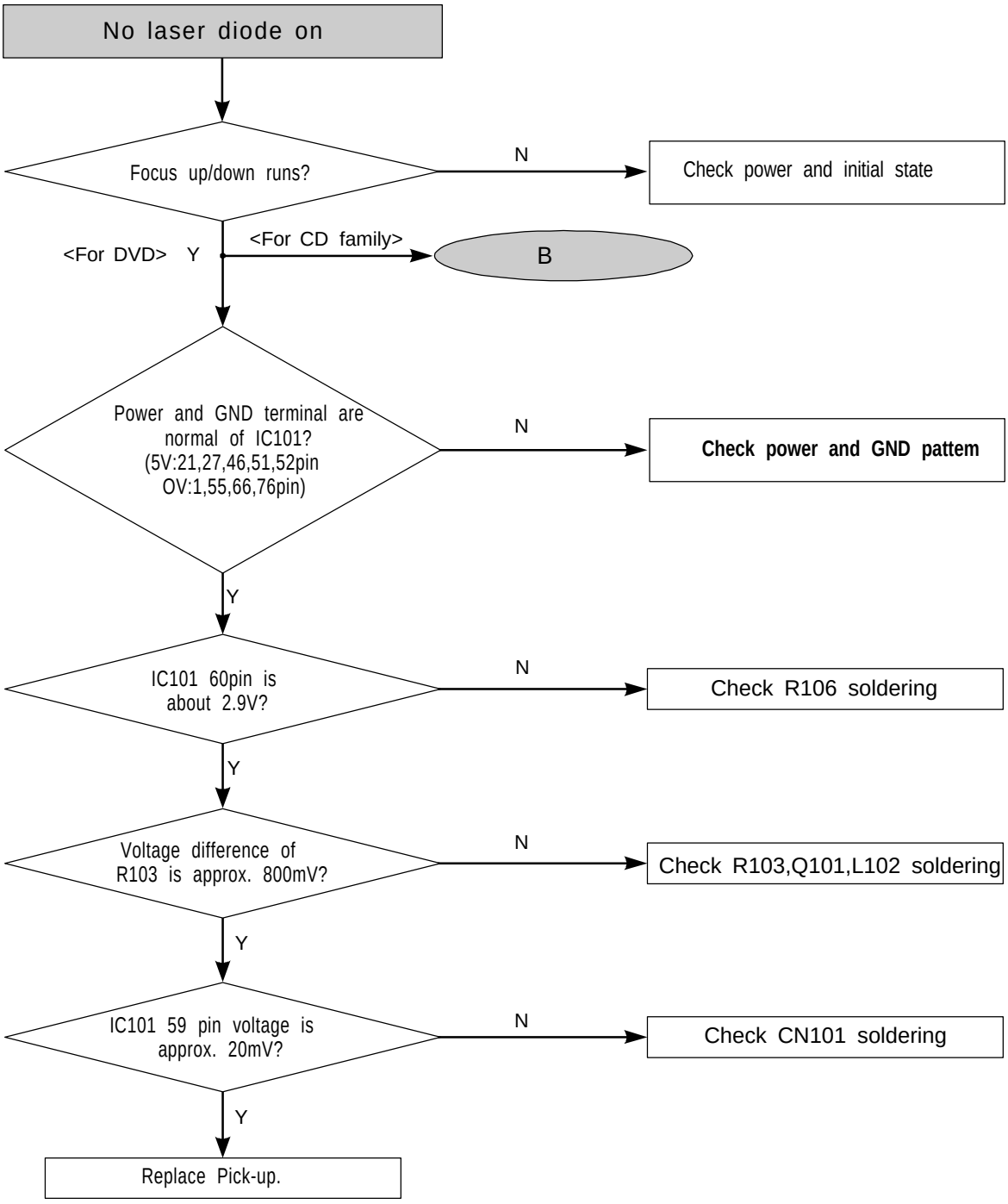


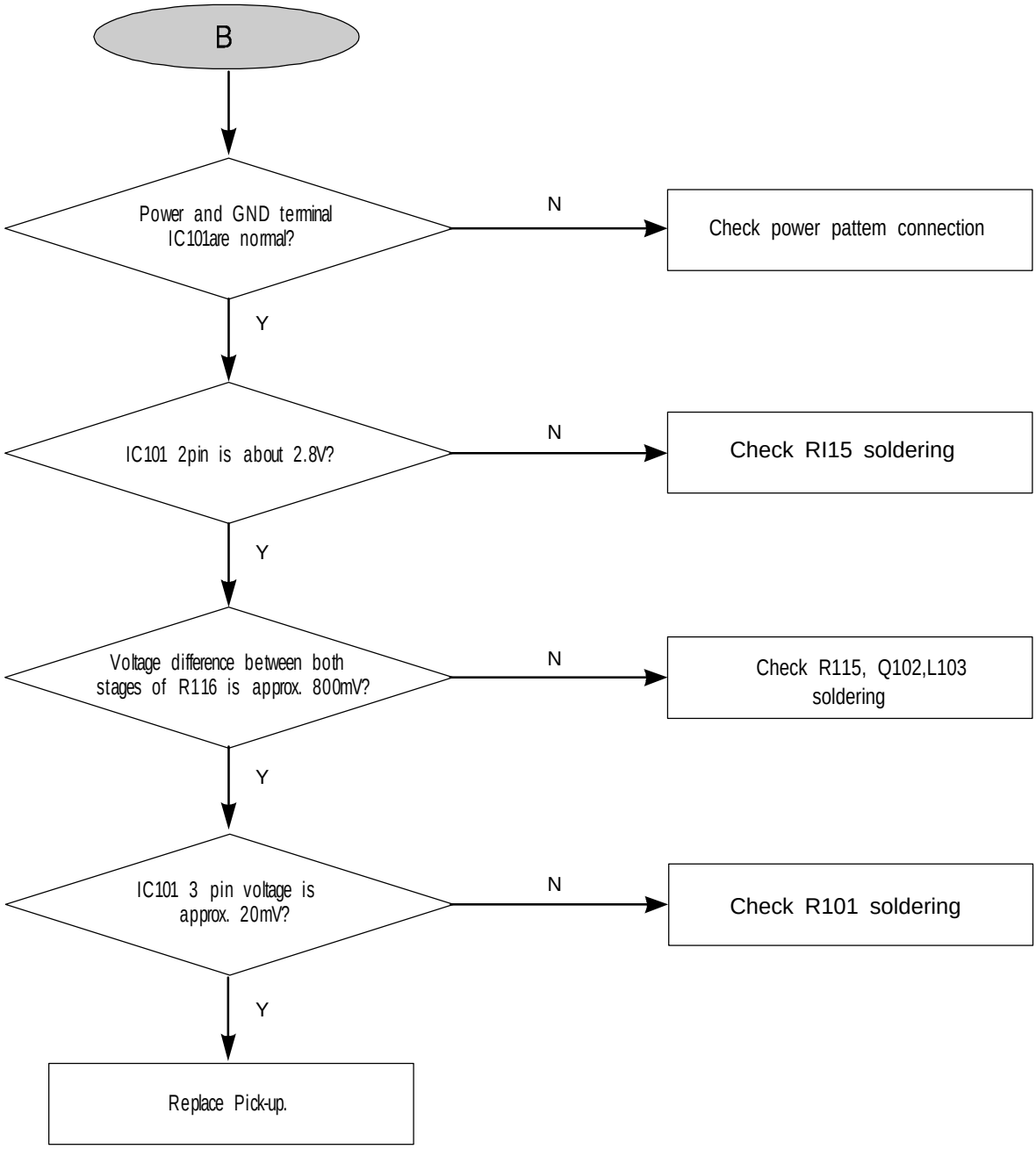


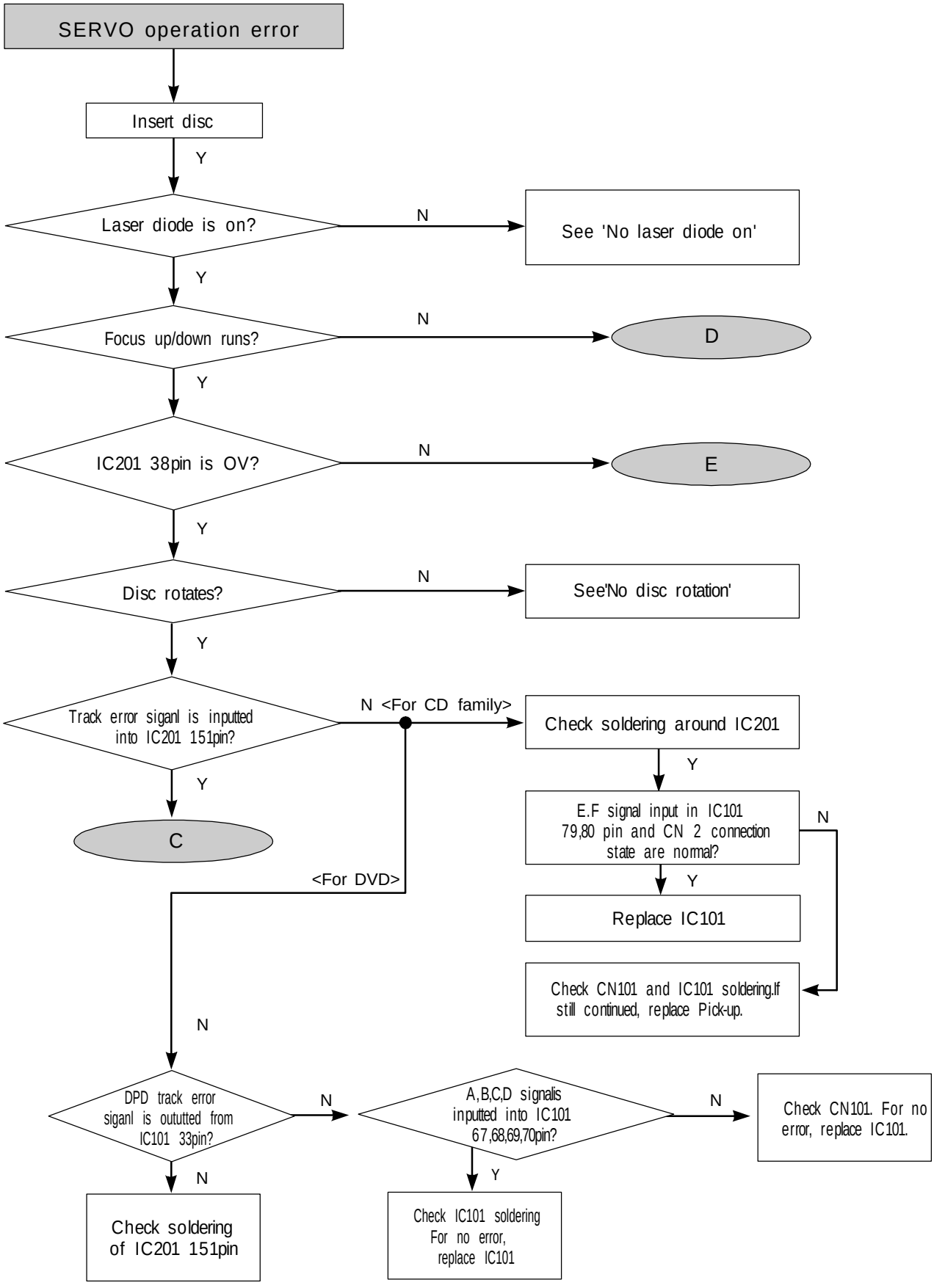


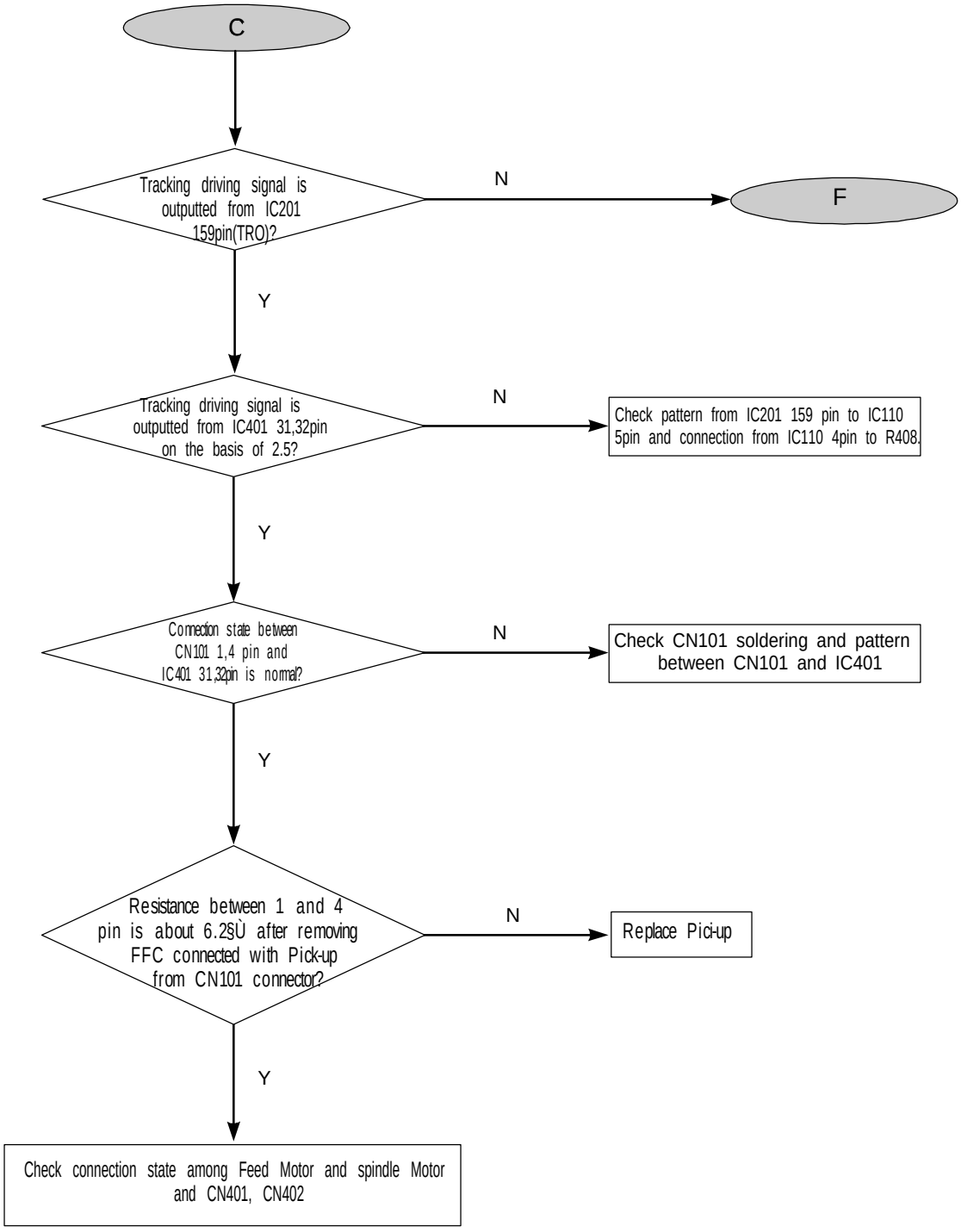
<TE signal at track jump>
(Temporary half state for DVD)

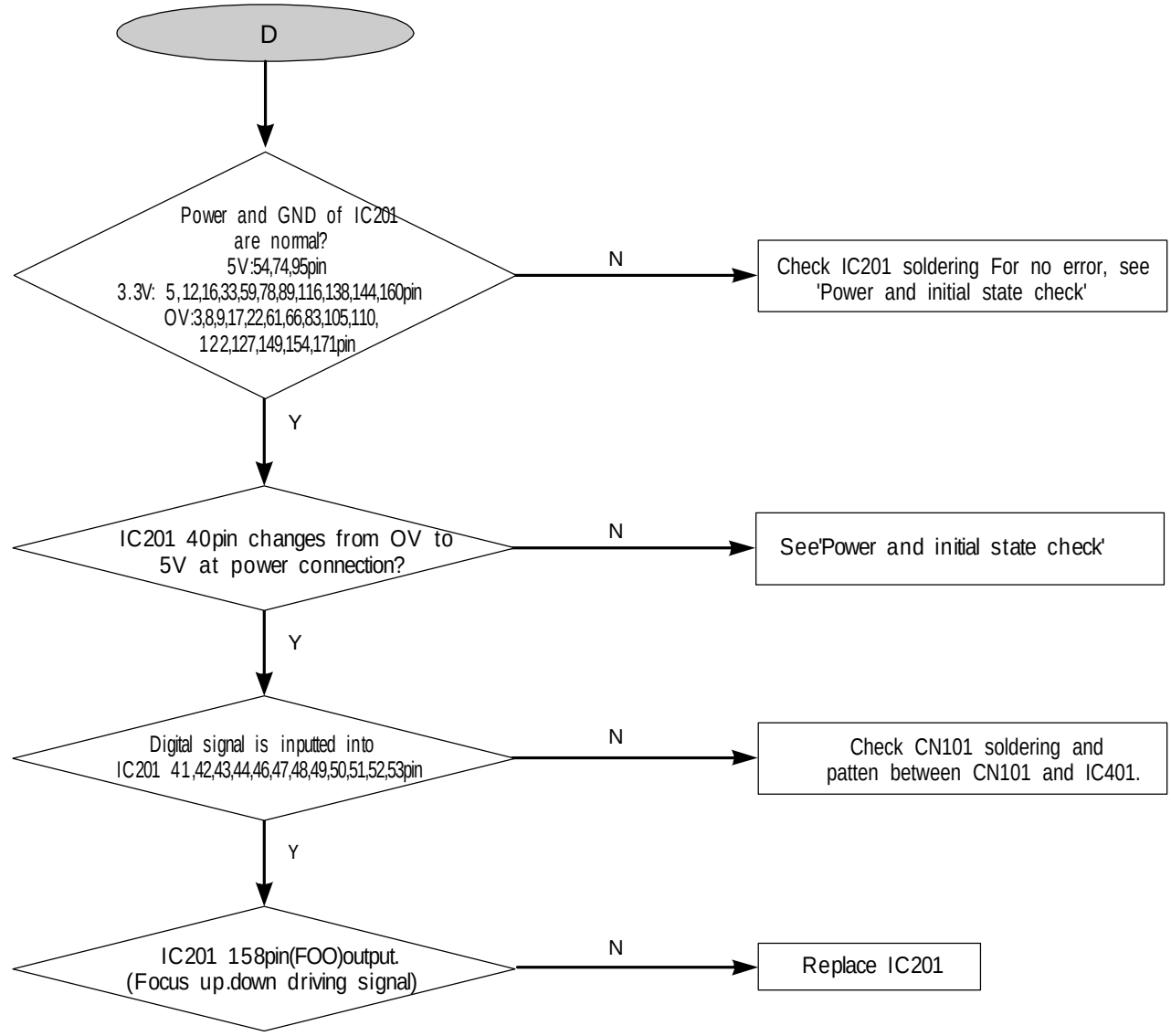

No tray open/close
Pin between SW701 and R311 OV at pressing SW701
N
Check SW701 slodering
Y
OV sigal is inputted into IC301 4pin at pressing SW701
N
Check pattern disconnection from R311 to IC301 41 pin
Y
OV, 5V switching signal of MSWI 3 pin is inputted into IC301 39pin?
N
Check SW702 soldering and patten
Y
OV,5V switching signal of MSWI 1 pin is inputted into IC301 40pin?
N
Check SW702 slodering and patten
Y
3V come from IC401 14,15 pin on the basis of 2.1V at pressing Open/Close key?
N
Check R410, R409, R405, R404 soldering, and If still not operated, replace IC401.
Y
Connection soldering and loading motor is normal?
N
Check soldering and wire connection state
Y
Open/close runs normally.

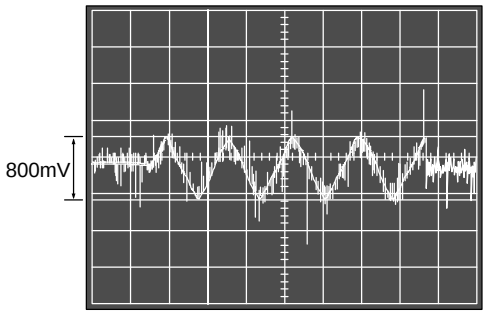

No laser diode on
Focus up/down runs?
N
Check power and initial state
<For DVD> Y
<For CD family>
B
Power and GND terminal are normal of IC101? (5V:21,27,46,51,52pin OV:1,55,66,76pin)
N
Check power and GND pattem
Y
IC101 60pin is about 2.9V?
N
Check R106 soldering
Y
Voltage difference of R103 is approx. 800mV?
N
Check R103,Q101,L102 soldering
Y
IC101 59 pin voltage is approx. 20mV?
N
Check CN101 soldering
Y
Replace Pick-up.


B
Power and GND terminal IC101are normal?
N
Check power pattem connection
Y
IC101 2pin is about 2.8V?
N
Check RI15 soldering
Y
Voltage difference between both stages of R116 is approx. 800mV?
N
Check R115, Q102,L103 soldering
Y
IC101 3 pin voltage is approx. 20mV?
N
Check R101 soldering
Y
Replace Pick-up.


SERVO operation error
Insert disc
Y
Laser diode is on?
N
See 'No laser diode on'
Y
Focus up/down runs?
N
D
Y
IC201 38pin is OV?
N
E
Y
Disc rotates?
N
See'No disc rotation'
Y
Track error siganl is inputted into IC201 151pin?
N <For CD family>
Check soldering around IC201
Y
E.F signal input in IC101 79,80 pin and CN 2 connection state are normal?
N
Y
Replace IC101
Check CN101 and IC101 soldering.If still continued, replace Pick-up.
Y
C
<For DVD>
N
DPD track error siganl is oututted from IC101 33pin?
N
A,B,C,D signalis inputted into IC101 67,68,69,70pin?
N
Check CN101. For no error, replace IC101.
N
Y
Check soldering of IC201 151pin
Check IC101 soldering For no error, replace IC101

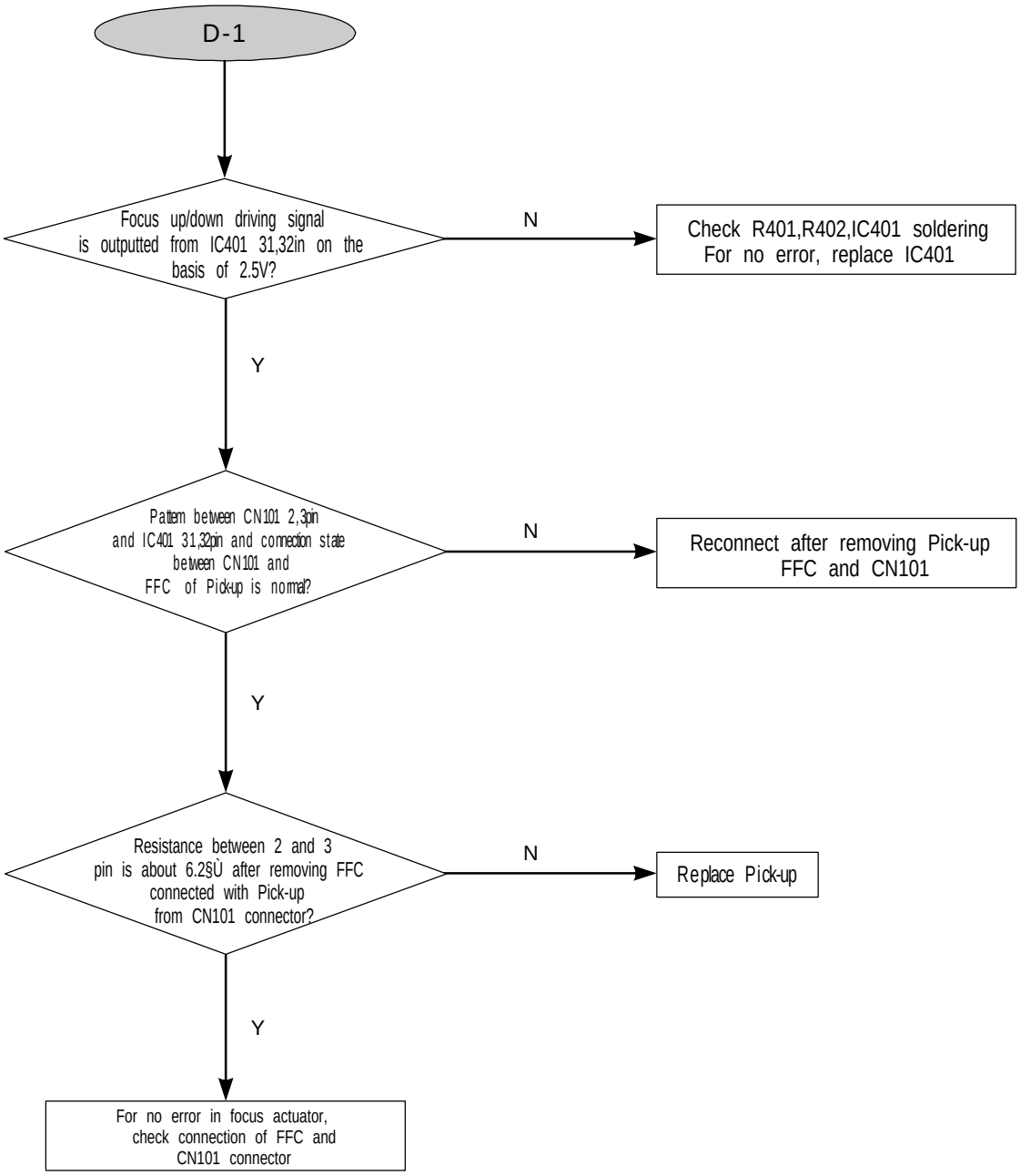

C
Tracking driving signal is outputted from IC201 159pin(TRO)?
N
F
Y
Tracking driving signal is outputted from IC401 31,32pin on the basis of 2.5?
N
Check pattern from IC201 159 pin to IC110 5pin and connection from IC110 4pin to R408.
Y
Connection state between CN101 1,4 pin and IC401 31,32pin is normal?
N
Check CN101 soldering and pattern between CN101 and IC401
Y
Resistance between 1 and 4 pin is about 6.2ÙÙ after removing FFC connected with Pick-up from CN101 connector?
N
Replace Pici-up
Y
Check connection state among Feed Motor and spindle Motor and CN401, CN402

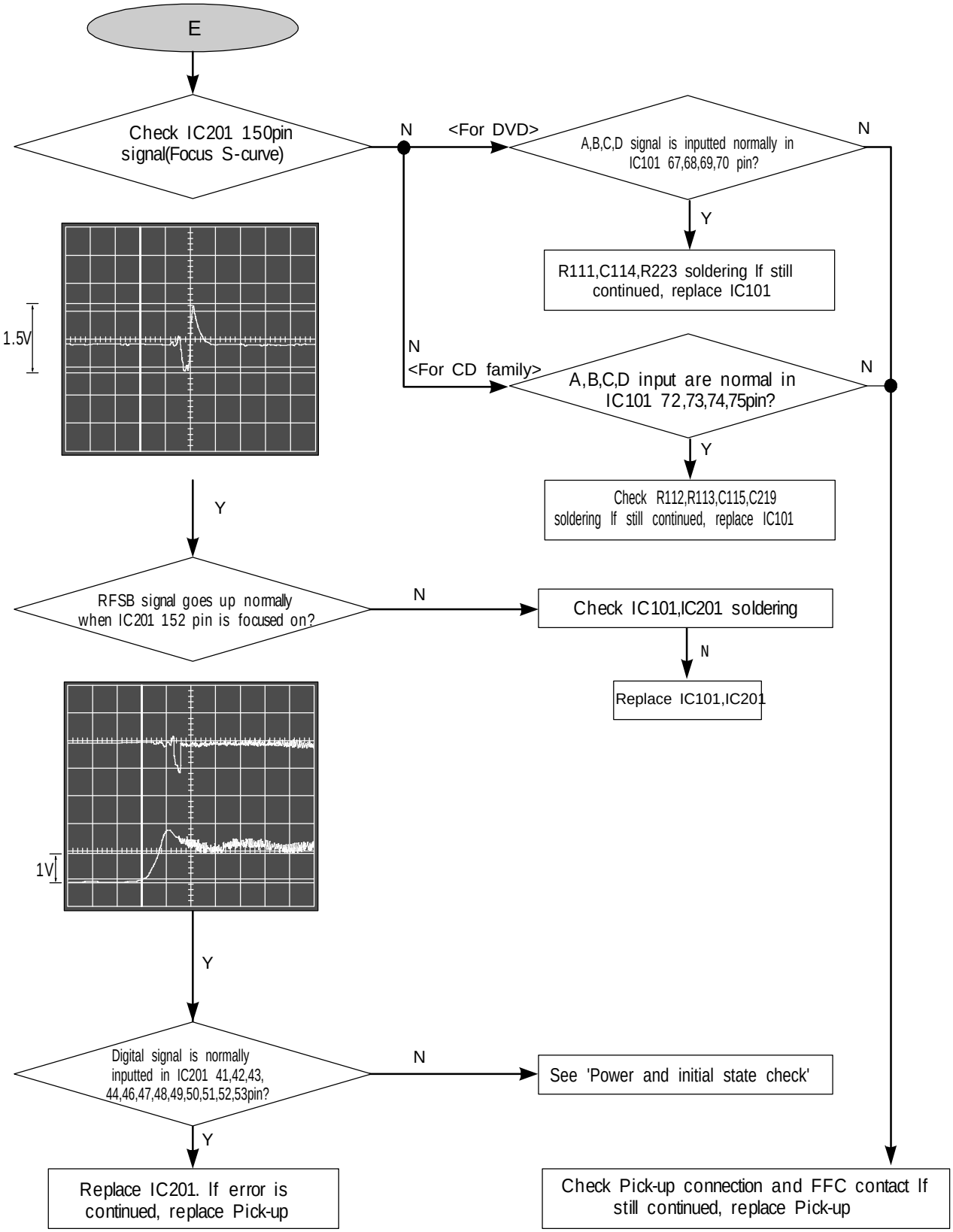

D
Power and GND of IC201 are normal?
5V:54,74,95pin
3.3V: 5,12,16,33,59,78,89,116,138,144,160pin
OV:3,8,9,17,22,61,66,83,105,110,
122,127,149,154,171pin
N
Check IC201 soldering For no error, see 'Power and initial state check'
Y
IC201 40pin changes from OV to 5V at power connection?
N
See'Power and initial state check'
Y
Digital signal is inputted into IC201 41,42,43,44,46,47,48,49,50,51,52,53pin
N
Check CN101 soldering and patten between CN101 and IC401.
Y
IC201 158pin(FOO)output. (Focus up.down driving signal)
N
Replace IC201

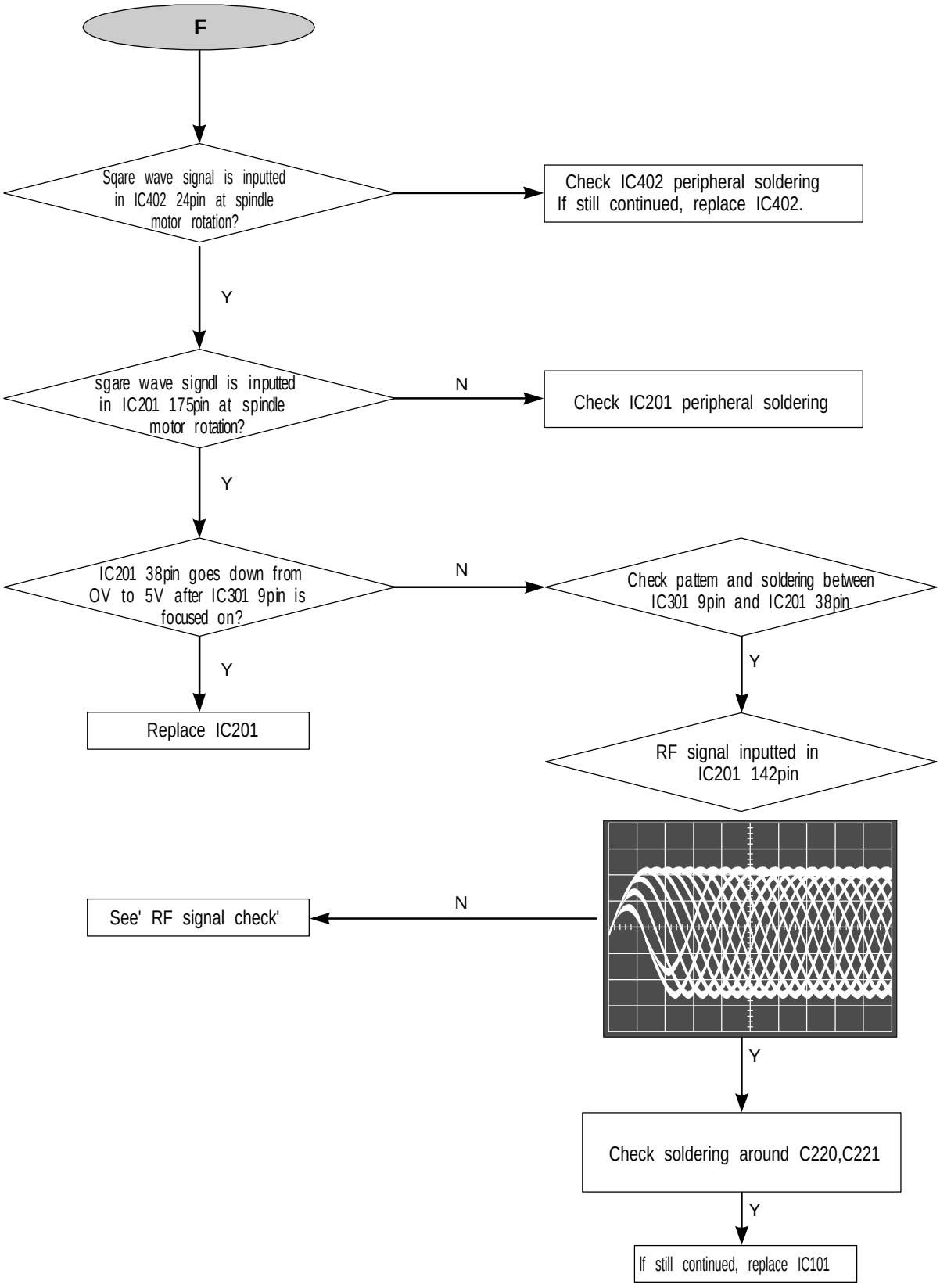

800mV

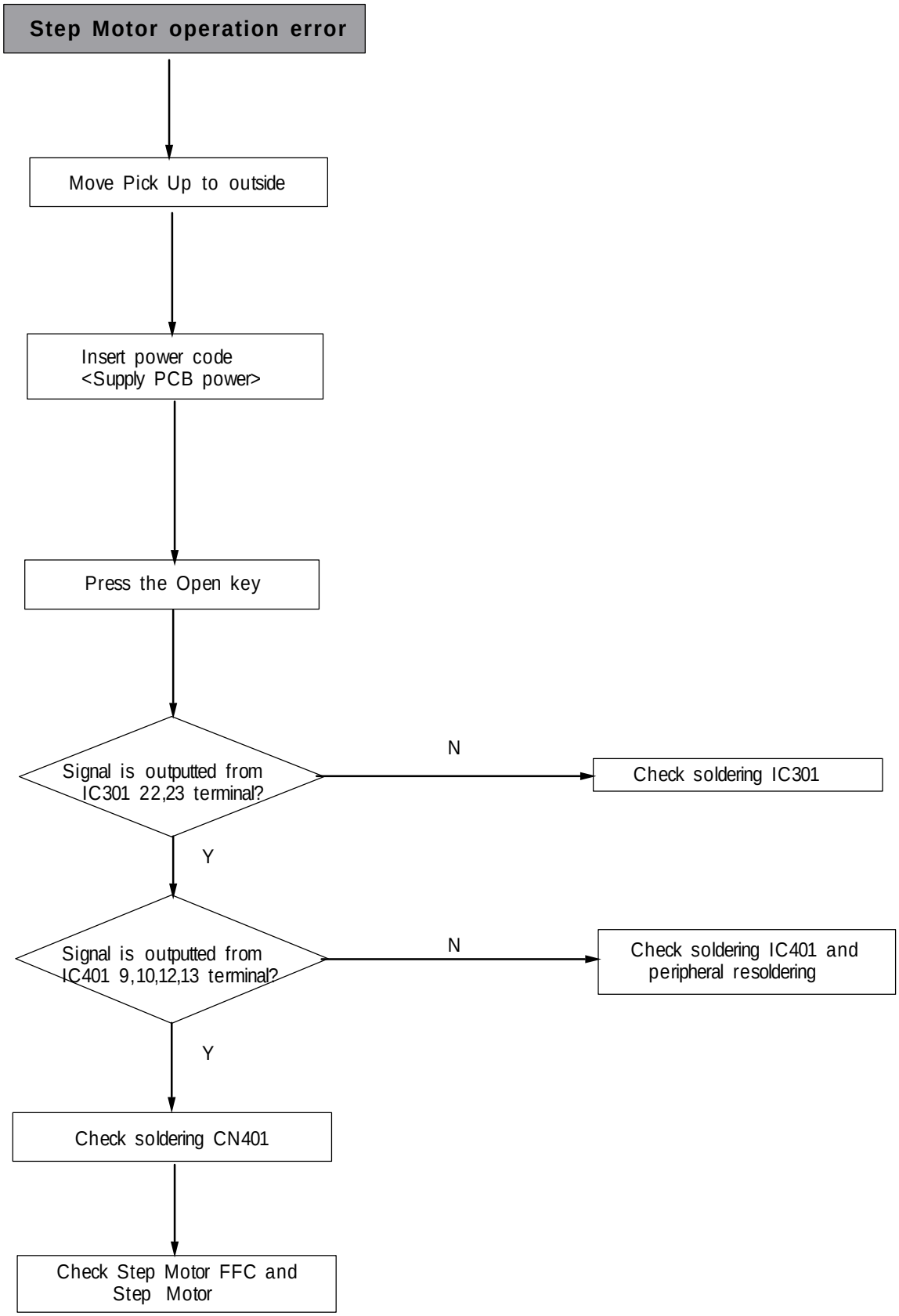
Y

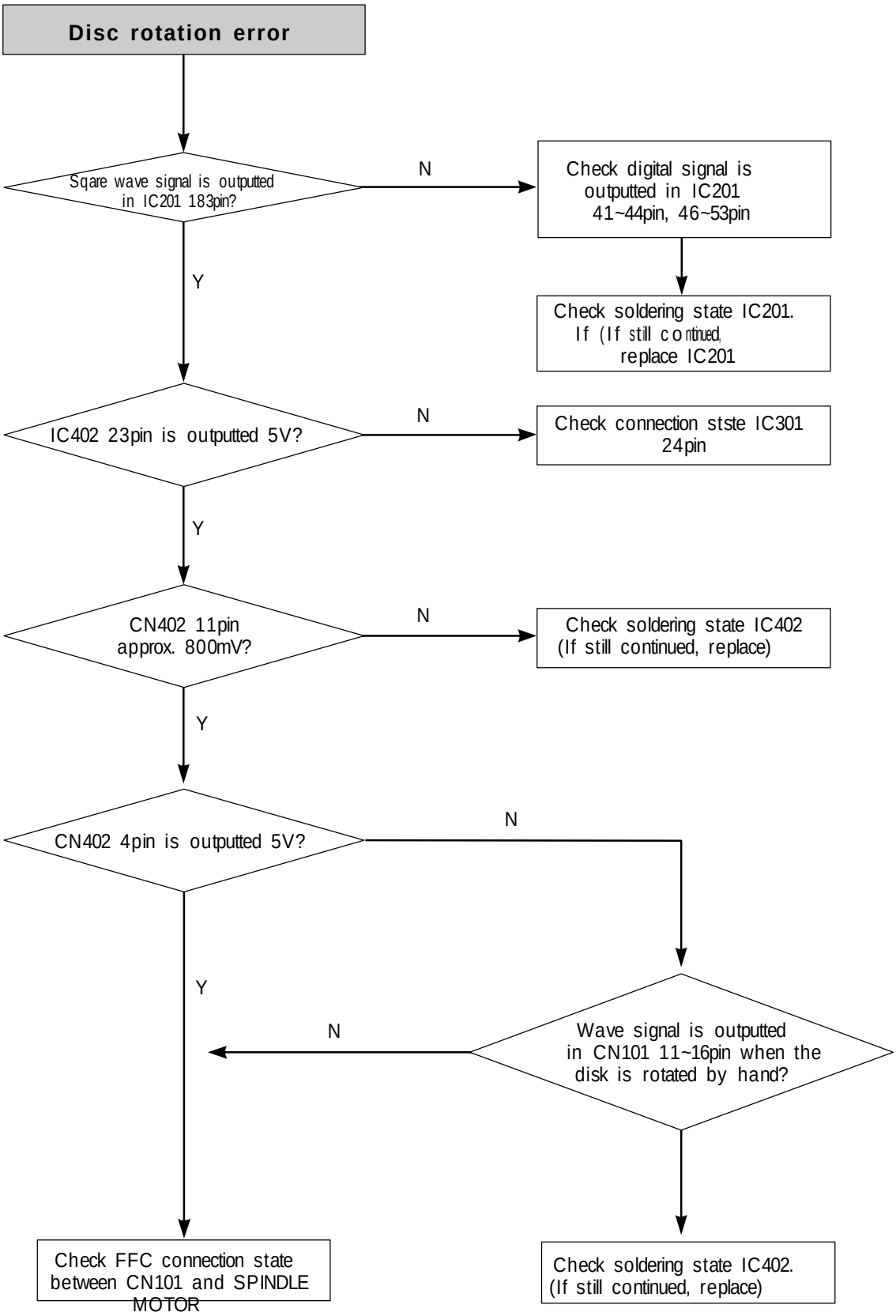
D-1

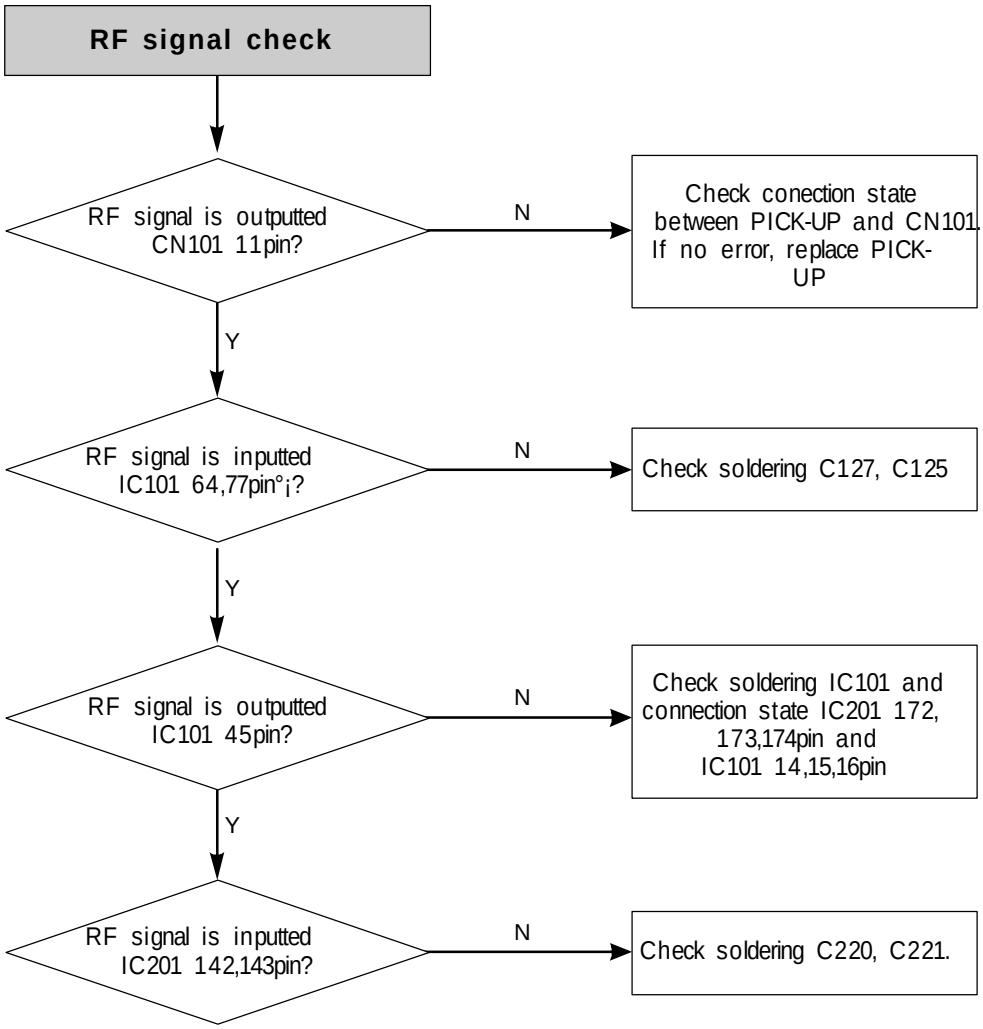

D-1
Focus up/down driving signal is outputted from IC401 31,32in on the basis of 2.5V?
N
Check R401,R402,IC401 soldering For no error, replace IC401
Y
Pattern between CN101 2,3pin and IC401 31,32pin and connection state between CN101 and FFC of Pick-up is normal?
N
Reconnect after removing Pick-up FFC and CN101
Y
Resistance between 2 and 3 pin is about 6.2ŠÙ after removing FFC connected with Pick-up from CN101 connector?
N
Replace Pick-up
Y
For no error in focus actuator, check connection of FFC and CN101 connector

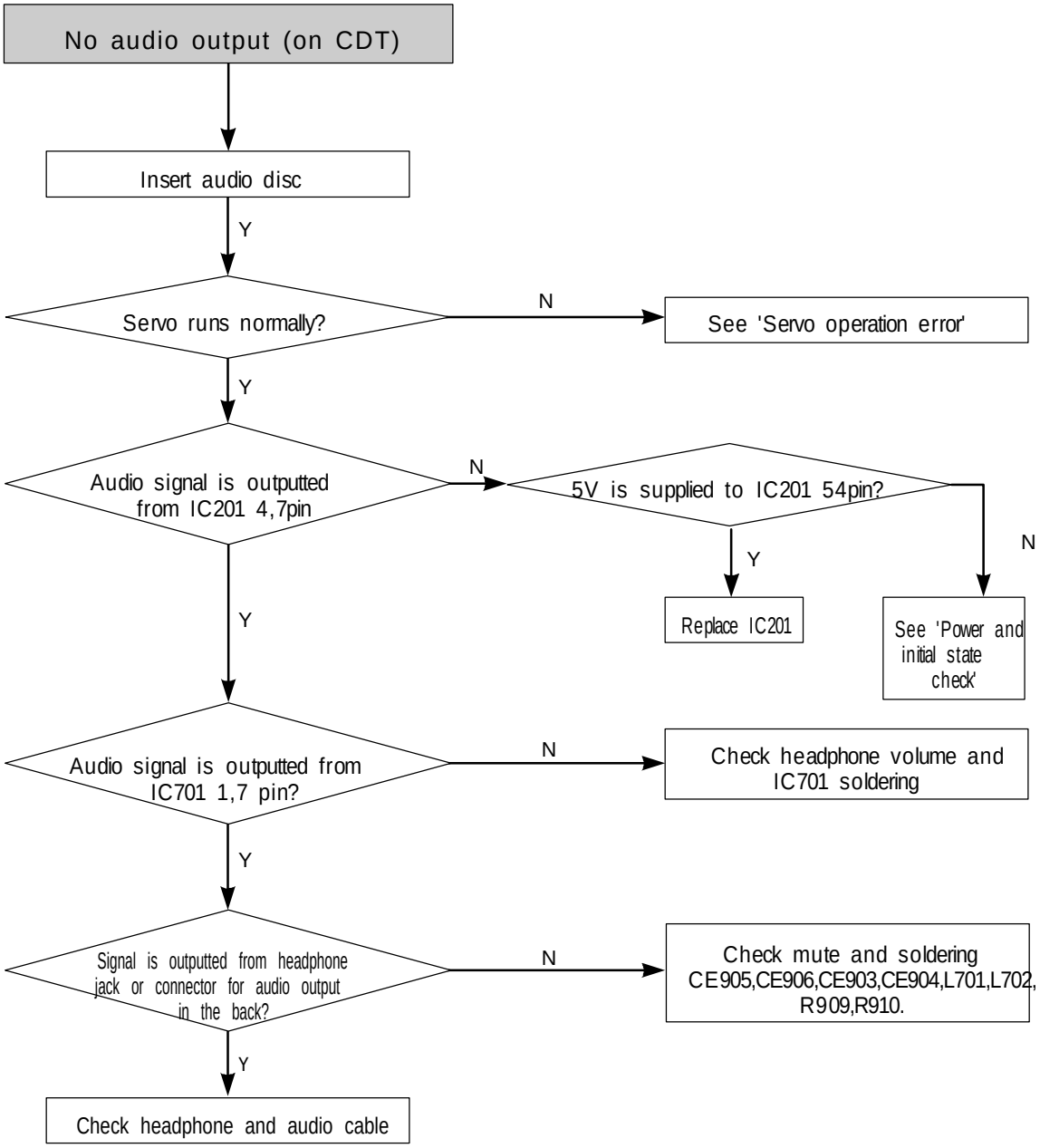

E
Check IC201 150pin signal(Focus S-curve)
N
<For DVD>
A,B,C,D signal is inputted normally in IC101 67,68,69,70 pin?
N
Y
R111,C114,R223 soldering If still continued, replace IC101
1.5V
N
<For CD family>
A,B,C,D input are normal in IC101 72,73,74,75pin?
N
Y
Check R112,R113,C115,C219 soldering If still continued, replace IC101
Y
RFSB signal goes up normally when IC201 152 pin is focused on?
N
Check IC101,IC201 soldering
N
Replace IC101,IC201
1V
Y
Digital signal is normally inputted in IC201 41,42,43, 44,46,47,48,49,50,51,52,53pin?
N
See 'Power and initial state check'
Y
Replace IC201. If error is continued, replace Pick-up
Check Pick-up connection and FFC contact If still continued, replace Pick-up

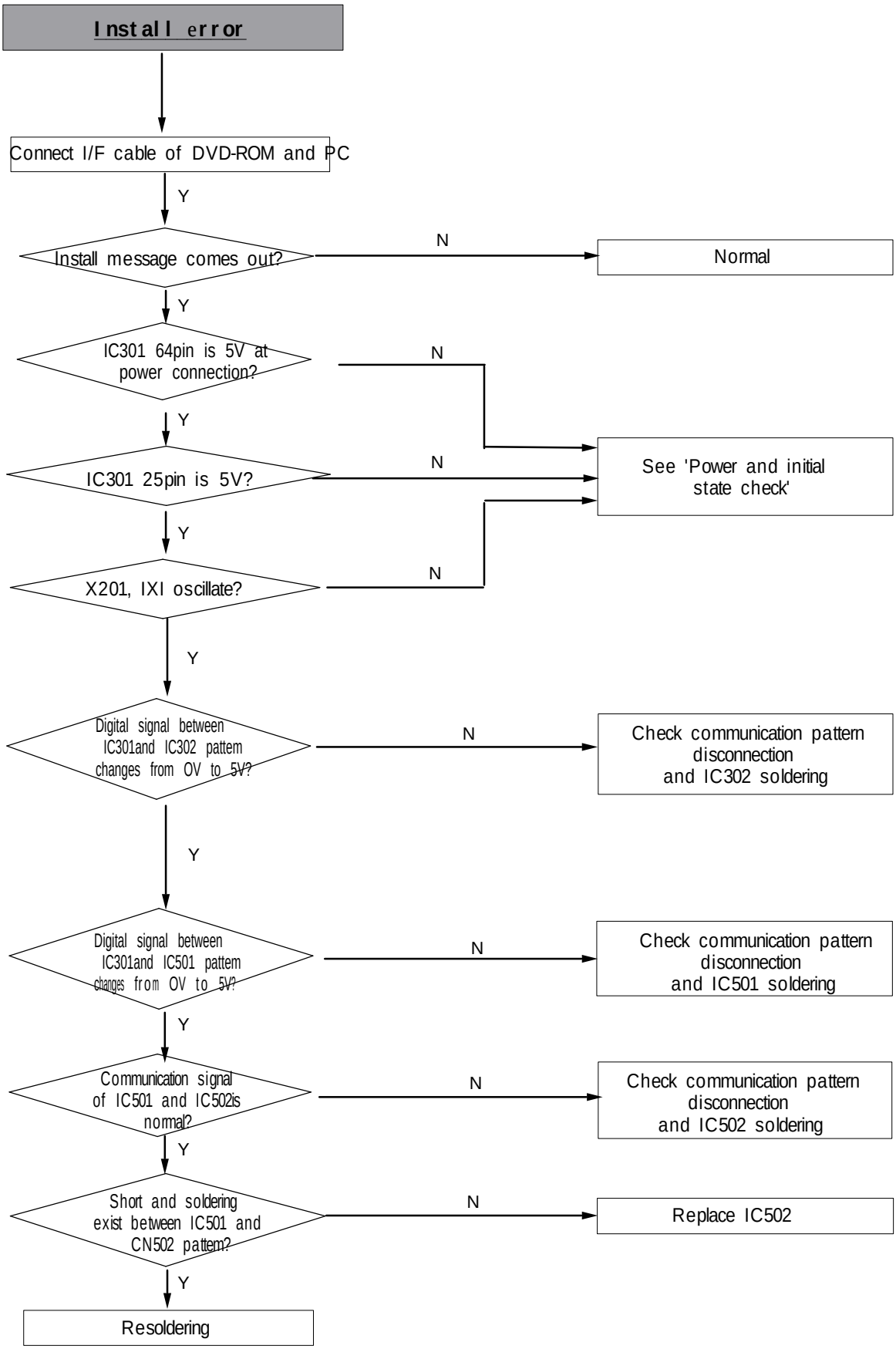

F
Sqare wave signal is inputted in IC402 24pin at spindle motor rotation?
Check IC402 peripheral soldering If still continued, replace IC402.
Y
sgare wave signdl is inputted in IC201 175pin at spindle motor rotation?
N
Check IC201 peripheral soldering
Y
IC201 38pin goes down from OV to 5V after IC301 9pin is focused on?
N
Check pattem and soldering between IC301 9pin and IC201 38pin
Y
Y
Replace IC201
RF signal inputted in IC201 142pin
N
See' RF signal check'
Y
Check soldering around C220,C221
Y
If still continued, replace IC101


Step Motor operation error
Move Pick Up to outside
Insert power code
<Supply PCB power>
Press the Open key
Signal is outputted from
IC301 22,23 terminal?
N
Check soldering IC301
Y
Signal is outputted from
IC401 9,10,12,13 terminal?
N
Check soldering IC401 and
peripheral resoldering
Y
Check soldering CN401
Check Step Motor FFC and
Step Motor


Disc rotation error
Sqare wave signal is outputted in IC201 183pin?
N
Check digital signal is outputted in IC201 41~44pin, 46~53pin
Y
Check soldering state IC201. If (If still continued, replace IC201
IC402 23pin is outputted 5V?
N
Check connection stste IC301 24pin
Y
CN402 11pin approx. 800mV?
N
Check soldering state IC402 (If still continued, replace)
Y
CN402 4pin is outputted 5V?
N
Y
N
Wave signal is outputted in CN101 11~16pin when the disk is rotated by hand?
Check FFC connection state between CN101 and SPINDLE MOTOR
Check soldering state IC402. (If still continued, replace)


RF signal check
RF signal is outputted CN101 11pin?
N
Check conection state between PICK-UP and CN101. If no error, replace PICK-UP
Y
RF signal is inputted IC101 64,77pin°¡?
N
Check soldering C127, C125
Y
RF signal is outputted IC101 45pin?
N
Check soldering IC101 and connection state IC201 172, 173,174pin and IC101 14,15,16pin
Y
RF signal is inputted IC201 142,143pin?
N
Check soldering C220, C221.


No audio output (on CDT)
Insert audio disc
Y
Servo runs normally?
N
See 'Servo operation error'
Y
Audio signal is outputted from IC201 4,7pin
N
5V is supplied to IC201 54pin?
Y
N
Replace IC201
See 'Power and initial state check'
Y
Audio signal is outputted from IC701 1,7 pin?
N
Check headphone volume and IC701 soldering
Y
Signal is outputted from headphone jack or connector for audio output in the back?
N
Check mute and soldering CE905,CE906,CE903,CE904,L701,L702, R909,R910.
Y
Check headphone and audio cable

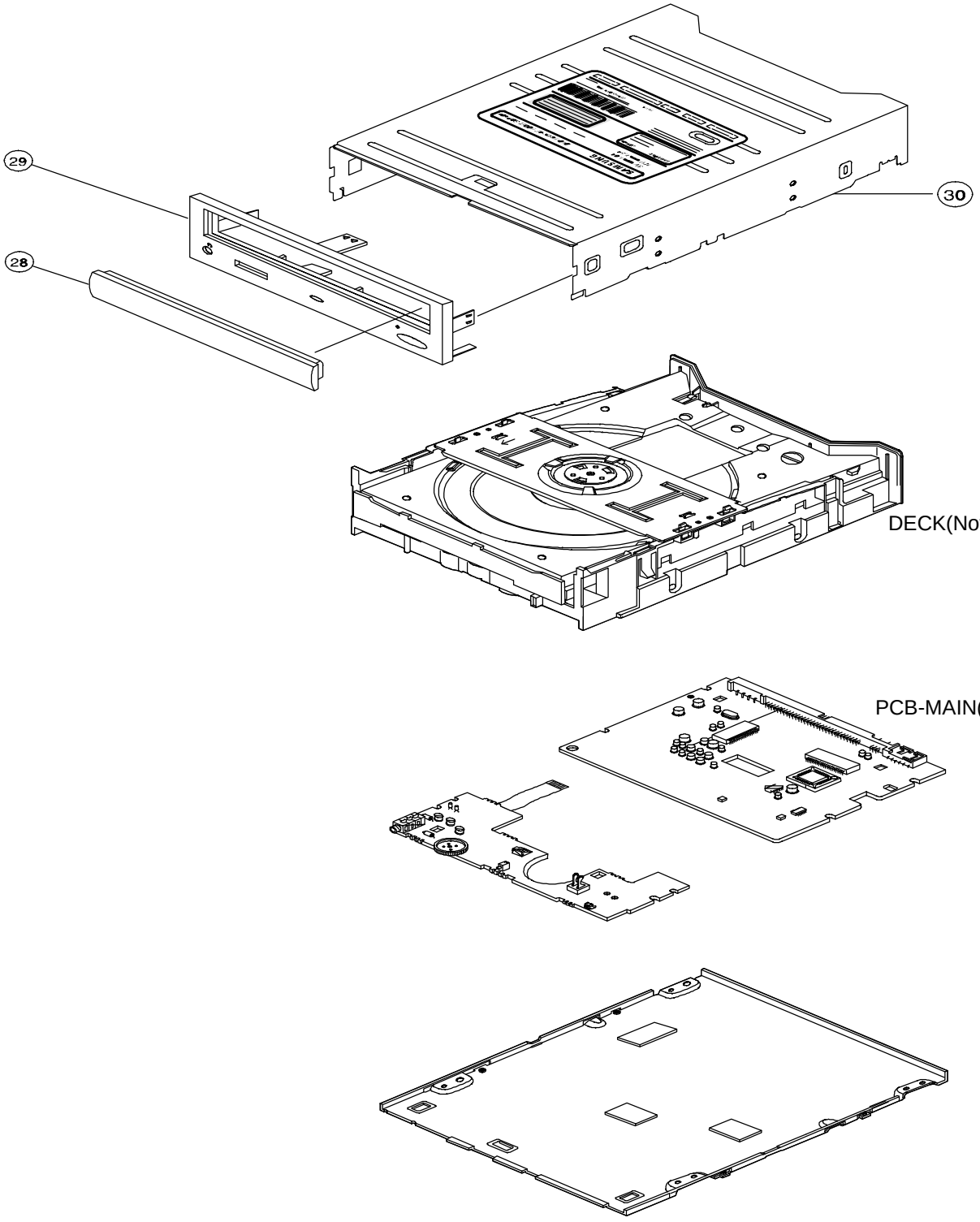

Install error
Connect I/F cable of DVD-ROM and PC
Y
Install message comes out?
N
Normal
Y
IC301 64pin is 5V at power connection?
N
Y
IC301 25pin is 5V?
N
See 'Power and initial state check'
Y
X201, IXI oscillate?
N
Y
Digital signal between IC301and IC302 pattem changes from OV to 5V?
N
Check communication pattern disconnection and IC302 soldering
Y
Digital signal between IC301and IC501 pattem changes from OV to 5V?
N
Check communication pattern disconnection and IC501 soldering
Y
Communication signal of IC501 and IC502is normal?
N
Check communication pattern disconnection and IC502 soldering
Y
Short and soldering exist between IC501 and CN502 pattem?
N
Replace IC502
Y
Resoldering

6. Exploded views and parts list

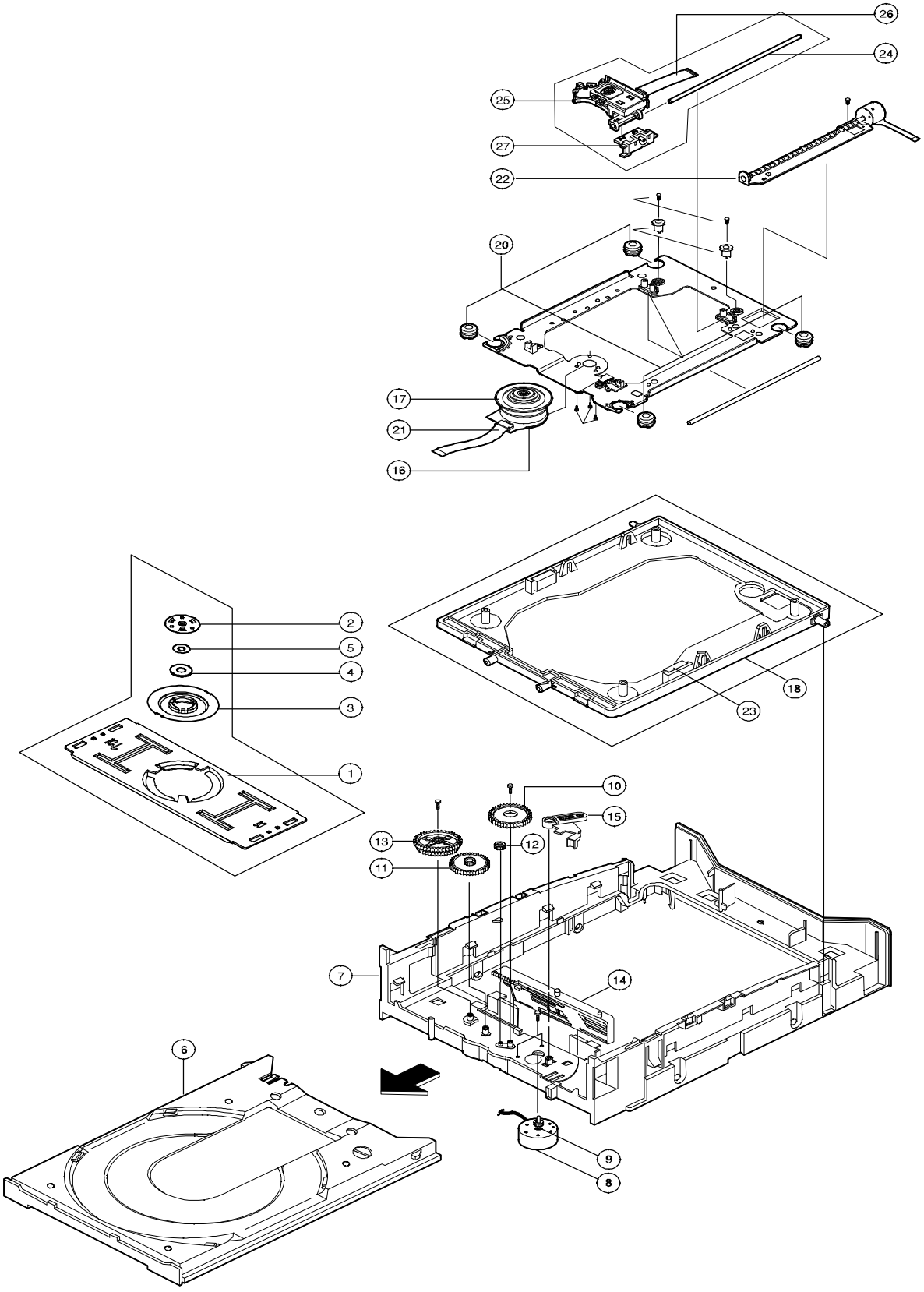
6-1. Entire exploded views ---------- 6-2

6-2. Deck exploded views ---------- 6-3

6-1. Entire exploded view



6-2. Deck exploded view



Level	CODE NO	PART NAME & SPEC	Q'ty
¡ß	BG97-00032A	ASSY DECK; SD-604	1
1	BG41-00007A	FFC P/U; PE 0.08T, 24PIN, 51.5mm	1
2	BG97-00003A	ASSY-PICK UP; SOH-D4	1
3	AH61-50278A	SHAFT-P.U(R); SUS 420 J2	1
4	BG31-00001A	MOTOR-STEPPING; SPS-15RF-051K, 5V/5	1
5	BG60-12001N	SCREW-TAPPING; M1.7x5, BH+, ZPC	2
6	BG60-10020A	SCREW SP MOTOR; -,BHW TOOTH,-, -, M1.7, 3	1
7	BG97-00013A	ASSY CLAMPER; DDR-4A	1
(1)	BG33-30001D	MAGNET CLAMPER; Nd-Fe-B(N30H)	1
(2)	BG61-00010A	BRACKETCLAMPER;SECCTO.8	1
(3)	BG61-00018A	BRACKET MAGNET; DDR-4, SECCO.8T	1
(4)	BG66-90013A	CLAMPER UPPER;DDR-4, KEPITAL F20-03	1
(5)	BG66-00001A	CLAMPER LOWER; DDR-4A, KEPITAL F20-03	1
8	BG97-00017A	ASSY LOADING; -----	1
(1)	BG60-42003A	RING SPRING;POM WHT(M90-44)	1
(2)	BG61-00011A	MAIN FRAME;DDR-4, ABS	1
(3)	BG61-60038A	SPRING LEVER;DDR-4, SUS304WPB	1
(4)	BG66-20139A	GEAR MOTOR; POM WHT(M90-44)	1
(5)	BG66-20140A	GEAR-A;NYLON 12 PA(L-1724K)	1
(6)	BG66-20141A	GEAR-B;POM WHT(M90-44)	1
(7)	BG66-00004A	GEAR TRAY;NW-02	1
(8)	BG66-20143A	GEAR-D;NYLON66	1
(9)	BG66-30017A	LEVER SWITCH; POM WHT(M90-44)	1
(10)	BG66-00003A	SLIDER CAM; POM WHT(M90-44)	1
(11)	BG31-00002A	MOTOR LOADING;SM-2412	2
(12)	AC60-10027A	SCREW MACHINE; BH,+, -, M1.7, 3,FZB	1
(13)	AH60-10145A	SCREW TAP TITE ;SPEC 0D5.5 FP TAP1.7	0.01g
(14)		GREASE-Loading; HANARL KF-73	4
9	BG97-00022A	ASSY FEEDING; D4A	1
(1)	AC60-10059A	SCREW TAPPING; M1. 7x5, BH+, ZPC	1
(2)	BG61-00002A	MAIN BASE M; SECC+POM, DDR-4	1
(3)	BG61-00004A	MAIN BASE P; SECC T1.6	1
(4)	BG61-20031A	HOLDER CAM; KEPITAL F20-03, DDR-4	2
(5)	BG73-00001A	R. INSULATOR; DDR-4, 11R	1
(6)	BG61-00001A	CHASSIS SUB; PC+ABS GF20%	1
(7)	BG61-00009A	SHAFT-PU(R); SUS 420J2	1
(8)	AH60-10143U	SCREW-TAP TITE; SPEC, TAP1.7, L5, ZP	0.1
(9)	BG69-00012A	PAD-DECK; PORON, BLACK, LE-20	1
(10)	BG60-10020A	SCREW SPINDLE; PE, O.O8T, 11PIN, SD-604F	2
(11)	BG41-00006A	FFC SPMOTOR; -.BHW TOOTH, -, -, M1.7L3	1
(12)	BG97-00071A	ASSY T/Table; DDR-4A	0.1
(13)	BG61-00018A	TURN TABLE; C3604BD, 30.0	1
(14)	BG66-00010A	BRKT-MAGNET; SECC T1.2, 5.4x 11.4	1
(15)	BG63-30018A	RUBBER T/T; 29, 22, TO. 45, CR, 16	1
(16)	BG31-00005A	MOTOR SPINDLE; RSM2610A 12.0V	1
(17)		GREASE-FEED; Froil G-754	1
(18)		GREASE-SHAFT; EP-100	1
10	BG97-00018A	ASSY SLIDE STEP; D4A	1
(1)	BG61-00007A	HOLDER SLIDER; PC(G20%)	1
(2)	BG61-40008A	STUD STEP; SUS303	1
(3)	BG61-00017A	SPRING STEP; SUS304WPB	1
(4)	BG66-00006A	SLIDER STEP; NW-02	4
11	BG66-00002A	TRAY DISC; PC+ABS	1

Level	CODE NO	PART NAME & SPEC	Q'ty
1	BG60-10027A	SCREW TAPPING; PH,TAP2.6, L8, SWP	4
2	BG68-50005A	LABEL QMS; SCR-830, TO 1L65W13	1
3	BG63-00011A	COVER TOP; SECC TO. 6	1
4	BG97-00073A	COVER BOTTOM; SD-604F	1
(1)	BG63-0005AA	COVER BOTTOM; SECC TO. 6	1
(2)	BG73-10113A	RUBBER-IC A; Si W20xL13xT1. 5	1
(3)		RUBBER-IC B; Si W20xL13xT1. 7	1
5	BG97-00016A	ASSY OPTION; SD-604F, DOMESTIC	1
(1)	BG64-00008A	DOOR TRAY; ABS VO	1
(2)	BG68-50081A	LABEL BUYER; ROM DOM L20W20 BLK	0.1
(3)	BG68-00013A	LABEL RATING; ART PAPER TO. 1	1
(4)	BG69-20327A	CUSHION SET; SCR3231/DOM EPS	2
(5)	BG69-30305A	BAG-PE; SCR3231 LDPE0. 05	1
(6)	BG69-40044A	MASTER CARTON BOX; SDR-430/DOM, SW-1 W418 L532	0.1
(7)	BG69-50026A	PACKING CASE; SDR-430 DOM, SW-3	1
(8)	BG97-00024A	ASSY PANNEL FRONT; D4A	1
¨ç	BG64-10350A	KNOB EJECT; ABS VO	1
¨è	BG64-00010A	PANEL FRONT; ABS VO	1
¨é	BG67-00002A	VENS LED; ACRYL MILKY(H1855M)	1
(9)	BG97-00072A	ACCESSORY; SDR-604F, DOM	1
¨ç	BG39-30002A	CABLE IF; SR, 380mm, HIF3BA	1
¨è	BG39-42001A	CABLE WIRE HARNESS; 4P, 3P, N, UL2547/UL1061	1
¨é	BG46-30001J	DISC FLOPPY; 3.51N, SCR2030	1
¨ê	BG68-00023A	MANUAL USERS; SDR-431, SNOW WHITE	1
¨ë	BG69-30307A	BAG PE; SCR3231, LDPE ANTI	1
¨ì	BG95-50004A	ASSY SCREW; SCR-2430	1
¨Í	BG60-12001H	SCREW MACHINE; -, PH, -, -, M3, L6, ZPC(WHT)	4
¨Î	BG69-30307A	BAG-PE; SCR3231, LDPE ANTI	1

7. ELECTRICAL PARTS LIST

DgnLoc	COMPONENT	DESCRIPTION	QTY	UN
	BG92-00026A	ASSY-PCB;SD-606F/DOM,ASSY-PCB	1.000	PC
	BG99-40002D	ASSY-PCB,c;SD-606F/DOM,ASSY-PCB	1.000	PC
	0202-001086	SOLDER-WIRE.;S63-R20,-,360X20x8,63SN/37P	0.849	G
	0202-001087	SOLDER-WIRE FLUX;KR19,S60A,D1.2,63SN/37P	0.095	G
	0204-000203	ISOPROPYL ALCOHOL;-,C2H50H,99%,-	0.383	G
	0204-001103	FLUX;SV95-1F,-,99.937,-	0.361	G
	BG41-00003A	P.C.B-MAIN;SD-604F,2 LAYER,CEM-3,247*142	1.000	PC
B801	3301-001082	CORE-FERRITE BEAD;AB,3.2X2.5X1.3X0.5MM,-	1.000	PC
B802	3301-001082	CORE-FERRITE BEAD;AB,3.2X2.5X1.3X0.5MM,-	1.000	PC
B804	3301-001082	CORE-FERRITE BEAD;AB,3.2X2.5X1.3X0.5MM,-	1.000	PC
C101	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C102	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C103	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C104	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C107	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,TP,1608,	1.000	PC
C108	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C109	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C110	2203-000140	C-CERAMIC,CHIP;1.5nF,10%,50V,X7R,TP,1608	1.000	PC
C111	2203-000140	C-CERAMIC,CHIP;1.5nF,10%,50V,X7R,TP,1608	1.000	PC
C112	2203-000783	C-CERAMIC,CHIP;330pF,5%,50V,NPO,TP,1608,	1.000	PC
C114	2203-000783	C-CERAMIC,CHIP;330pF,5%,50V,NPO,TP,1608,	1.000	PC
C115	2203-001656	C-CERAMIC,CHIP;470pF,5%,50V,CH,TP,1608,1	1.000	PC
C116	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C117	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C118	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C119	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C120	2203-000440	C-CERAMIC,CHIP;1nF,10%,50V,X7R,TP,1608,-	1.000	PC
C121	2203-000440	C-CERAMIC,CHIP;1nF,10%,50V,X7R,TP,1608,-	1.000	PC
C122	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C123	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C124	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C125	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C126	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C127	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C160	2203-002398	C-CERAMIC,CHIP;22nF,10%,50V,X7R,TP,1608,	1.000	PC
C161	2203-000140	C-CERAMIC,CHIP;1.5nF,10%,50V,X7R,TP,1608	1.000	PC
C164	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C165	2203-001103	C-CERAMIC,CHIP;6.8nF,10%,50V,X7R,TP,1608	1.000	PC
C166	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C179	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C201	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C202	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC

DgnLoc	COMPONENT	DESCRIPTION	QTY	UN
C204	2203-000440	C-CERAMIC,CHIP;1nF,10%,50V,X7R,TP,1608,-	1.000	PC
C205	2203-000384	C-CERAMIC,CHIP;15pF,5%,50V,NPO,TP,1608,-	1.000	PC
C206	2203-000384	C-CERAMIC,CHIP;15pF,5%,50V,NPO,TP,1608,-	1.000	PC
C207	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C208	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C209	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C210	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C211	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C212	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C213	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C214	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C215	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C216	2203-000715	C-CERAMIC,CHIP;3.3nF,10%,50V,X7R,TP,1608	1.000	PC
C217	2203-000715	C-CERAMIC,CHIP;3.3nF,10%,50V,X7R,TP,1608	1.000	PC
C218	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C219	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C220	2203-001052	C-CERAMIC,CHIP;560pF,10%,50V,X7R,TP,1608	1.000	PC
C221	2203-001052	C-CERAMIC,CHIP;560pF,10%,50V,X7R,TP,1608	1.000	PC
C222	2203-005105	C-CERAMIC,CHIP;680pF,5%,50V,CH,TP,1608,1	1.000	PC
C223	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C224	2203-000236	C-CERAMIC,CHIP;100pF,5%,50V,NPO,TP,1608,	1.000	PC
C225	2203-001630	C-CERAMIC,CHIP;330nF,+80-20%,16V,Y5V,TP,	1.000	PC
C226	2203-001103	C-CERAMIC,CHIP;6.8nF,10%,50V,X7R,TP,1608	1.000	PC
C228	2203-000888	C-CERAMIC,CHIP;4.7nF,10%,50V,X7R,TP,1608	1.000	PC
C229	2203-000491	C-CERAMIC,CHIP;2.2nF,10%,50V,X7R,TP,1608	1.000	PC
C230	2203-000041	C-CERAMIC,CHIP;10pF,0.25pF,50V,NPO,TP,16	1.000	PC
C231	2203-000041	C-CERAMIC,CHIP;10pF,0.25pF,50V,NPO,TP,16	1.000	PC
C234	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C235	2203-000372	C-CERAMIC,CHIP;15nF,10%,50V,X7R,TP,1608,	1.000	PC
C252	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C255	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C301	2203-001195	C-CERAMIC,CHIP;7pF,0.25pF,50V,NPO,TP,160	1.000	PC
C302	2203-001195	C-CERAMIC,CHIP;7pF,0.25pF,50V,NPO,TP,160	1.000	PC
C303	2203-000440	C-CERAMIC,CHIP;1nF,10%,50V,X7R,TP,1608,-	1.000	PC
C304	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C305	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C348	2203-000440	C-CERAMIC,CHIP;1nF,10%,50V,X7R,TP,1608,-	1.000	PC
C351	2203-000783	C-CERAMIC,CHIP;330pF,5%,50V,NPO,TP,1608,	1.000	PC
C352	2203-000783	C-CERAMIC,CHIP;330pF,5%,50V,NPO,TP,1608,	1.000	PC
C390	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,TP,1608,	1.000	PC
C401	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C402	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C403	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C407	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC

DgnLoc	COMPONENT	DESCRIPTION	QTY	UN
C408	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C409	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C410	2203-000888	C-CERAMIC,CHIP;4.7nF,10%,50V,X7R,TP,1608	1.000	PC
C411	2203-000888	C-CERAMIC,CHIP;4.7nF,10%,50V,X7R,TP,1608	1.000	PC
C412	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C414	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C415	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C451	2203-000998	C-CERAMIC,CHIP;47pF,5%,50V,NPO,TP,1608,-	1.000	PC
C460	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,TP,1608,	1.000	PC
C501	2203-000552	C-CERAMIC,CHIP;20pF,5%,50V,NPO,TP,1608,-	1.000	PC
C502	2203-000552	C-CERAMIC,CHIP;20pF,5%,50V,NPO,TP,1608,-	1.000	PC
C503	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C504	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C505	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C506	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C507	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C508	2203-000626	C-CERAMIC,CHIP;22pF,5%,50V,NPO,TP,1608,-	1.000	PC
C509	2203-000626	C-CERAMIC,CHIP;22pF,5%,50V,NPO,TP,1608,-	1.000	PC
C510	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C511	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C515	2203-000236	C-CERAMIC,CHIP;100pF,5%,50V,NPO,TP,1608,	1.000	PC
C517	2203-000041	C-CERAMIC,CHIP;10pF,0.25pF,50V,NPO,TP,16	1.000	PC
C801	2203-001630	C-CERAMIC,CHIP;330nF,+80-20%,16V,Y5V,TP,	1.000	PC
C802	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C803	2203-002793	C-CERAMIC,CHIP;1uF,+80-20%,25V,Y5V,TP,20	1.000	PC
C804	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C805	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
C917	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000	PC
CE101	2402-000112	C-AL,SMD;10uF,20%,16V,GP,TP,3.3x3.3x5.4	1.000	PC
CE102	2402-000136	C-AL,SMD;22uF,20%,16V,GP,TP,5.3x5.3x5.2	1.000	PC
CE103	2402-000112	C-AL,SMD;10uF,20%,16V,GP,TP,3.3x3.3x5.4	1.000	PC
CE105	2402-000112	C-AL,SMD;10uF,20%,16V,GP,TP,3.3x3.3x5.4	1.000	PC
CE106	2402-000136	C-AL,SMD;22uF,20%,16V,GP,TP,5.3x5.3x5.2	1.000	PC
CE107	2402-000136	C-AL,SMD;22uF,20%,16V,GP,TP,5.3x5.3x5.2	1.000	PC
CE108	2402-000112	C-AL,SMD;10uF,20%,16V,GP,TP,3.3x3.3x5.4	1.000	PC
CE109	2402-000136	C-AL,SMD;22uF,20%,16V,GP,TP,5.3x5.3x5.2	1.000	PC
CE141	2402-000112	C-AL,SMD;10uF,20%,16V,GP,TP,3.3x3.3x5.4	1.000	PC
CE201	2402-000112	C-AL,SMD;10uF,20%,16V,GP,TP,3.3x3.3x5.4	1.000	PC
CE202	2402-000112	C-AL,SMD;10uF,20%,16V,GP,TP,3.3x3.3x5.4	1.000	PC
CE203	2402-000112	C-AL,SMD;10uF,20%,16V,GP,TP,3.3x3.3x5.4	1.000	PC
CE204	2402-000112	C-AL,SMD;10uF,20%,16V,GP,TP,3.3x3.3x5.4	1.000	PC
CE205	2402-000136	C-AL,SMD;22uF,20%,16V,GP,TP,5.3x5.3x5.2	1.000	PC
CE206	2402-000112	C-AL,SMD;10uF,20%,16V,GP,TP,3.3x3.3x5.4	1.000	PC

DgnLoc	COMPONENT	DESCRIPTION	QTY	UN
CE210	2404-000304	C-TA,CHIP;22uF,20%,6.3V,-,TP,3528,-	1.000	PC
CE230	2402-000008	C-AL,SMD;47uF,20%,16V,GP,TP,6.6x6.6x5.4	1.000	PC
CE301	2402-000008	C-AL,SMD;47uF,20%,16V,GP,TP,6.6x6.6x5.4	1.000	PC
CE401	2404-000304	C-TA,CHIP;22uF,20%,6.3V,-,TP,3528,-	1.000	PC
CE402	2404-000304	C-TA,CHIP;22uF,20%,6.3V,-,TP,3528,-	1.000	PC
CE801	2402-000008	C-AL,SMD;47uF,20%,16V,GP,TP,6.6x6.6x5.4	1.000	PC
CE802	2402-000008	C-AL,SMD;47uF,20%,16V,GP,TP,6.6x6.6x5.4	1.000	PC
CE804	2402-000008	C-AL,SMD;47uF,20%,16V,GP,TP,6.6x6.6x5.4	1.000	PC
CE903	2402-000112	C-AL,SMD;10uF,20%,16V,GP,TP,3.3x3.3x5.4	1.000	PC
CE904	2402-000112	C-AL,SMD;10uF,20%,16V,GP,TP,3.3x3.3x5.4	1.000	PC
CE910	2402-000112	C-AL,SMD;10uF,20%,16V,GP,TP,3.3x3.3x5.4	1.000	PC
CE911	2404-000304	C-TA,CHIP;22uF,20%,6.3V,-,TP,3528,-	1.000	PC
CN101	3708-000385	CONNECTOR-FPC/FC/PIC;24P,0.5MM,SMD-A,SN	1.000	PC
CN401	3708-001347	CONNECTOR-FPC/FC/PIC;4P,-,SMD-A,SN	1.000	PC
CN402	3708-001348	CONNECTOR-FPC/FC/PIC;11P,-,SMD-A,SN	1.000	PC
CN903	3708-001346	CONNECTOR-FPC/FC/PIC;13P,-,SMD-A,SN	1.000	PC
D101	0401-000008	DIODE-SWITCHING;DAN217,80V,100mA,SOT-23,	1.000	PC
D102	0401-000008	DIODE-SWITCHING;DAN217,80V,100mA,SOT-23,	1.000	PC
D201	0401-000008	DIODE-SWITCHING;DAN217,80V,100mA,SOT-23,	1.000	PC
IC101	BG13-00003A	IC-ASIC;-,TA1293F,QFP,80P,RF IC	1.000	PC
IC102	1001-001003	IC-ANALOG SWITCH;4S66,BILATERAL,SOP,5P,1	1.000	PC
IC110	0801-002279	IC-CMOS LOGIC;74VHC4053,MUX,SOP,16P,150M	1.000	PC
IC111	1201-000003	IC-AMPLIFIER;3414A,SOP,8P,DUAL,OP_AMP,CM	1.000	PC
IC201	BG13-00002A	IC-ASIC;-,TC9453AF,QFP,176P,SERVO/DATA P	1.000	PC
IC203	1105-001246	IC-DRAM;V53C16258HK25,256KX16BIT, SOJ,40	1.000	PC
IC255	0801-000305	IC-CMOS LOGIC;7SU04,INVERTER,SOP,5P,150M	1.000	PC
IC301	0903-001145	IC-MICROCOMPUTER;88C4504,8BIT,TQFP,80P,-	1.000	PC
IC302	3704-000249	SOCKET-IC;32P,PLCC,SN,1.27mm	1.000	PC
IC303	0801-002143	IC-CMOS LOGIC;7S32,OR GATE,SOT-25,5P,63M	1.000	PC
IC305	1203-001394	IC-VOL. DETECTOR;9735,SOT-23,3P,-,PLASTI	1.000	PC
IC310	0801-002353	IC-CMOS LOGIC;74VHCT00,NAND GATE,SOP,14P	1.000	PC
IC401	1003-001221	IC-MOTOR DRIVER;M56788FP,SSOP,42P,450MIL	1.000	PC
IC402	1003-001068	IC-MOTOR DRIVER;BA6849FP,SOP,28P,300MIL,	1.000	PC
IC460	1201-000003	IC-AMPLIFIER;3414A,SOP,8P,DUAL,OP_AMP,CM	1.000	PC
IC501	BG13-10001C	IC-ASIC;-,TC9469F,QFP,144P,ATAPI	1.000	PC
IC502	1105-001135	IC-DRAM;416C254,256Kx16BIT,SOJ,40P,400	1.000	PC
IC801	1203-001500	IC-VOLTAGE REGULATOR;20WZ5U,SOP,5,-,PLAS	1.000	PC
IC802	1203-001500	IC-VOLTAGE REGULATOR;20WZ5U,SOP,5,-,PLAS	1.000	PC
L101	2703-000127	INDUCTOR-SMD;10UH,5%,2.5X3.2X2.2MM	1.000	PC
L102	2703-000127	INDUCTOR-SMD;10UH,5%,2.5X3.2X2.2MM	1.000	PC
L103	2703-000127	INDUCTOR-SMD;10UH,5%,2.5X3.2X2.2MM	1.000	PC
Q101	0501-000251	TR-SMALL SIGNAL;BC807,PNP,310mW,SOT-23,T	1.000	PC
Q102	0501-000251	TR-SMALL SIGNAL;BC807,PNP,310mW,SOT-23,T	1.000	PC
Q201	0504-000128	TR-DIGITAL;-,NPN,200MW,22K/22K,SOT-23,TP	1.000	PC
Q901	0501-000534	TR-SMALL SIGNAL;2SC2412K,NPN,200mW,SOT-2	1.000	PC

DgnLoc	COMPONENT	DESCRIPTION	QTY	UN
Q902	0501-000534	TR-SMALL SIGNAL;2SC2412K,NPN,200mW,SOT-2	1.000	PC
Q903	0501-000150	TR-SMALL SIGNAL;2SA1037,PNP,200MW,SOT-23	1.000	PC
R101	2007-000075	R-CHIP;220ohm,5%,1/16W,DA,TP,1608	1.000	PC
R102	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	1.000	PC
R103	2007-000415	R-CHIP;15OHM,5%,1/10W,DA,TP,2012	1.000	PC
R104	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R105	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R106	2007-000081	R-CHIP;2.7Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R107	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000	PC
R110	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000	PC
R111	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R112	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000	PC
R113	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R114	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	1.000	PC
R115	2007-000081	R-CHIP;2.7Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R116	2007-000415	R-CHIP;15OHM,5%,1/10W,DA,TP,2012	1.000	PC
R132	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000	PC
R150	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000	PC
R160	2007-000101	R-CHIP;82Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R161	2007-000101	R-CHIP;82Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R162	2007-000101	R-CHIP;82Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R163	2007-000101	R-CHIP;82Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R164	2007-000125	R-CHIP;3.9Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R165	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R166	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R167	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R168	2007-000082	R-CHIP;3.3Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R169	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R170	2007-000134	R-CHIP;33Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R171	2007-000124	R-CHIP;2.2Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R173	2007-000092	R-CHIP;15Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R174	2007-000092	R-CHIP;15Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R175	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R180	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000	PC
R201	2007-000097	R-CHIP;47Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R203	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000	PC
R204	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R205	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R206	2007-000107	R-CHIP;470Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R207	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R208	2007-000109	R-CHIP;1Mohm,5%,1/16W,DA,TP,1608	1.000	PC
R209	2007-000134	R-CHIP;33Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R210	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R211	2007-000082	R-CHIP;3.3Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R212	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000	PC

DgnLoc	COMPONENT	DESCRIPTION	QTY	UN
R213	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R214	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R215	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R216	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R217	2007-000082	R-CHIP;3.3Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R218	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R219	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R220	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R221	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R222	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R223	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	1.000	PC
R224	2007-000097	R-CHIP;47Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R225	2007-000097	R-CHIP;47Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R226	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R227	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R228	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R229	2007-000066	R-CHIP;20Kohm,1%,1/16W,DA,TP,1608	1.000	PC
R230	2007-000736	R-CHIP;30Kohm,1%,1/16W,DA,TP,1608	1.000	PC
R231	2007-000669	R-CHIP;2Kohm,1%,1/16W,DA,TP,1608	1.000	PC
R232	2007-000043	R-CHIP;1Kohm,1%,1/16W,DA,TP,1608	1.000	PC
R234	2007-000106	R-CHIP;220Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R235	2007-000134	R-CHIP;33Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R236	2007-000458	R-CHIP;18Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R237	2007-000124	R-CHIP;2.2Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R238	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000	PC
R239	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R240	2007-000097	R-CHIP;47Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R241	2007-000097	R-CHIP;47Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R243	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R244	2007-000082	R-CHIP;3.3Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R255	2007-000109	R-CHIP;1Mohm,5%,1/16W,DA,TP,1608	1.000	PC
R289	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000	PC
R296	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000	PC
R301	2007-000616	R-CHIP;24Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R302	2007-000092	R-CHIP;15Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R304	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000	PC
R305	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000	PC
R307	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000	PC
R308	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R309	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R310	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R311	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R313	2007-000097	R-CHIP;47Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R314	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R315	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000	PC

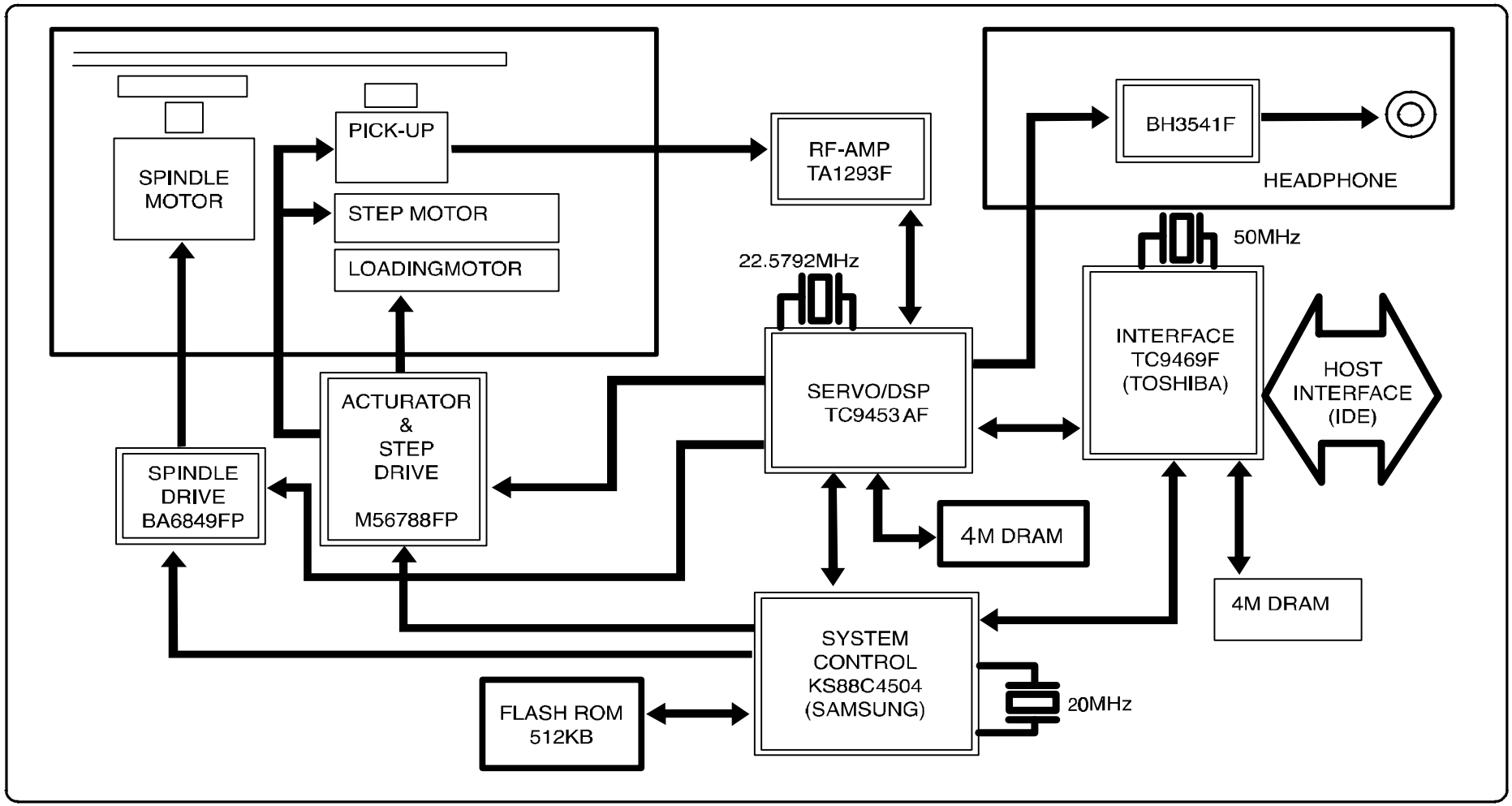
DgnLoc	COMPONENT	DESCRIPTION	QTY	UN
R316	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	1.000	PC
R320	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R321	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R323	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R330	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	1.000	PC
R331	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R351	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R352	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R360	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000	PC
R365	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000	PC
R366	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000	PC
R380	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000	PC
R381	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R382	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R383	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R401	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R402	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R403	2007-000130	R-CHIP;39Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R404	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R405	2007-000708	R-CHIP;3.9Kohm,1%,1/16W,DA,TP,1608	1.000	PC
R406	2007-000100	R-CHIP;68Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R407	2007-000130	R-CHIP;39Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R408	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R409	2007-000067	R-CHIP;15Kohm,1%,1/16W,DA,TP,1608	1.000	PC
R410	2007-000583	R-CHIP;22Kohm,1%,1/16W,DA,TP,1608	1.000	PC
R411	2007-001134	R-CHIP;68ohm,5%,1/16W,DA,TP,1608	1.000	PC
R413	2007-001134	R-CHIP;68ohm,5%,1/16W,DA,TP,1608	1.000	PC
R414	2007-000036	R-CHIP;2OHM,5%,1/8W,DA,TP,3216	1.000	PC
R415	2007-000036	R-CHIP;2OHM,5%,1/8W,DA,TP,3216	1.000	PC
R416	2007-000036	R-CHIP;2OHM,5%,1/8W,DA,TP,3216	1.000	PC
R417	2007-000036	R-CHIP;2OHM,5%,1/8W,DA,TP,3216	1.000	PC
R420	2007-000100	R-CHIP;68Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R421	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000	PC
R425	2007-000100	R-CHIP;68Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R426	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R427	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000	PC
R444	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000	PC
R451	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000	PC
R452	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000	PC
R453	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R460	2007-000134	R-CHIP;33Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R461	2007-000106	R-CHIP;220Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R462	2007-000124	R-CHIP;2.2Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R463	2007-000124	R-CHIP;2.2Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R464	2007-000106	R-CHIP;220Kohm,5%,1/16W,DA,TP,1608	1.000	PC

DgnLoc	COMPONENT	DESCRIPTION	QTY	UN
R501	2007-000071	R-CHIP;22ohm,5%,1/16W,DA,TP,1608	1.000	PC
R502	2007-000071	R-CHIP;22ohm,5%,1/16W,DA,TP,1608	1.000	PC
R503	2007-000071	R-CHIP;22ohm,5%,1/16W,DA,TP,1608	1.000	PC
R504	2007-000071	R-CHIP;22ohm,5%,1/16W,DA,TP,1608	1.000	PC
R505	2007-000071	R-CHIP;22ohm,5%,1/16W,DA,TP,1608	1.000	PC
R506	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000	PC
R507	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000	PC
R509	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000	PC
R512	2007-000109	R-CHIP;1Mohm,5%,1/16W,DA,TP,1608	1.000	PC
R515	2007-000072	R-CHIP;47ohm,5%,1/16W,DA,TP,1608	1.000	PC
R516	2007-000072	R-CHIP;47ohm,5%,1/16W,DA,TP,1608	1.000	PC
R517	2007-000072	R-CHIP;47ohm,5%,1/16W,DA,TP,1608	1.000	PC
R518	2007-000072	R-CHIP;47ohm,5%,1/16W,DA,TP,1608	1.000	PC
R519	2007-000072	R-CHIP;47ohm,5%,1/16W,DA,TP,1608	1.000	PC
R520	2007-000072	R-CHIP;47ohm,5%,1/16W,DA,TP,1608	1.000	PC
R521	2007-000072	R-CHIP;47ohm,5%,1/16W,DA,TP,1608	1.000	PC
R522	2007-000072	R-CHIP;47ohm,5%,1/16W,DA,TP,1608	1.000	PC
R523	2007-000072	R-CHIP;47ohm,5%,1/16W,DA,TP,1608	1.000	PC
R524	2007-000072	R-CHIP;47ohm,5%,1/16W,DA,TP,1608	1.000	PC
R525	2007-000072	R-CHIP;47ohm,5%,1/16W,DA,TP,1608	1.000	PC
R526	2007-000072	R-CHIP;47ohm,5%,1/16W,DA,TP,1608	1.000	PC
R527	2007-000072	R-CHIP;47ohm,5%,1/16W,DA,TP,1608	1.000	PC
R528	2007-000072	R-CHIP;47ohm,5%,1/16W,DA,TP,1608	1.000	PC
R529	2007-000072	R-CHIP;47ohm,5%,1/16W,DA,TP,1608	1.000	PC
R530	2007-000072	R-CHIP;47ohm,5%,1/16W,DA,TP,1608	1.000	PC
R531	2007-000071	R-CHIP;22ohm,5%,1/16W,DA,TP,1608	1.000	PC
R532	2007-000115	R-CHIP;82ohm,5%,1/16W,DA,TP,1608	1.000	PC
R533	2007-000115	R-CHIP;82ohm,5%,1/16W,DA,TP,1608	1.000	PC
R534	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000	PC
R535	2007-000115	R-CHIP;82ohm,5%,1/16W,DA,TP,1608	1.000	PC
R536	2007-000071	R-CHIP;22ohm,5%,1/16W,DA,TP,1608	1.000	PC
R537	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000	PC
R538	2007-000115	R-CHIP;82ohm,5%,1/16W,DA,TP,1608	1.000	PC
R539	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000	PC
R540	2007-000115	R-CHIP;82ohm,5%,1/16W,DA,TP,1608	1.000	PC
R541	2007-000115	R-CHIP;82ohm,5%,1/16W,DA,TP,1608	1.000	PC
R542	2007-000115	R-CHIP;82ohm,5%,1/16W,DA,TP,1608	1.000	PC
R543	2007-000115	R-CHIP;82ohm,5%,1/16W,DA,TP,1608	1.000	PC
R544	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000	PC
R545	2007-000097	R-CHIP;47Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R546	2007-000097	R-CHIP;47Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R547	2007-000072	R-CHIP;47ohm,5%,1/16W,DA,TP,1608	1.000	PC
R548	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	1.000	PC
R555	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000	PC
R556	2007-000087	R-CHIP;6.8Kohm,5%,1/16W,DA,TP,1608	1.000	PC

DgnLoc	COMPONENT	DESCRIPTION	QTY	UN
R570	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R571	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R572	2007-000122	R-CHIP;1.2Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R573	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R574	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R575	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R576	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R591	2007-000087	R-CHIP;6.8Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R592	2007-000087	R-CHIP;6.8Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R593	2007-000087	R-CHIP;6.8Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R594	2007-000087	R-CHIP;6.8Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R595	2007-000087	R-CHIP;6.8Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R596	2007-000087	R-CHIP;6.8Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R597	2007-000087	R-CHIP;6.8Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R801	2007-000120	R-CHIP;680ohm,5%,1/16W,DA,TP,1608	1.000	PC
R802	2007-000669	R-CHIP;2Kohm,1%,1/16W,DA,TP,1608	1.000	PC
R805	2007-000079	R-CHIP;1.8Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R806	2007-000080	R-CHIP;2Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R833	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000	PC
R884	2007-007775	R-CHIP;18OHM,5%,1W,DA,TP,6432	1.000	PC
R909	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R910	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R911	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R912	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R913	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R914	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R915	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000	PC
R917	2007-000105	R-CHIP;200Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R937	2007-000097	R-CHIP;47Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R938	2007-000097	R-CHIP;47Kohm,5%,1/16W,DA,TP,1608	1.000	PC
R939	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	1.000	PC
VR201	2104-000001	VR-SMD;1KOHM,25%,0.15W,TOP/BOTTOM	1.000	PC
X201	2801-003687	CRYSTAL-SMD;22.5792MHz,50ppm,28-ABX,16pF	1.000	PC
X301	2802-001068	RESONATOR-CERAMIC;20MHz,0.5%,TP,3.7x3.1x	1.000	PC
X501	2802-001046	RESONATOR-CERAMIC;50MHz,0.5%,TP,3.7x3.1x	1.000	PC
	BG99-90002H	ASSY-PCB,m;SD-606F/DOM,ASSY-PCB	1.000	PC
	0202-000001	SOLDER-CREAM;RMA2007,-,-,63Sn/37Pb,-	0.004	KG
	BG68-50023A	LABEL-ROM;-,ART PAPER,T0.1,L8.8,W8.8,WHT	1.000	PC
CN501	3710-000001	CONNECTOR-SHUNT;2P,1R,2.54mm,-,SN	1.000	PC
CN501	3711-003262	CONNECTOR-HEADER;BOX,56P,2R,2.54MM/5.08M	1.000	PC
IC302	1103-001144	IC-EEPROM;29EE512,64KX8BIT,PLCC,32P,-,70	1.000	PC
	BG92-00005A	ASSY-PCB;SD-604F,ASSY-PCB FRONT	1.000	PC
	0202-001086	SOLDER-WIRE.;S63-R20,-,360X20x8,63SN/37P	0.849	G
	0202-001087	SOLDER-WIRE FLUX;KR19,S60A,D1.2,63SN/37P	0.381	G

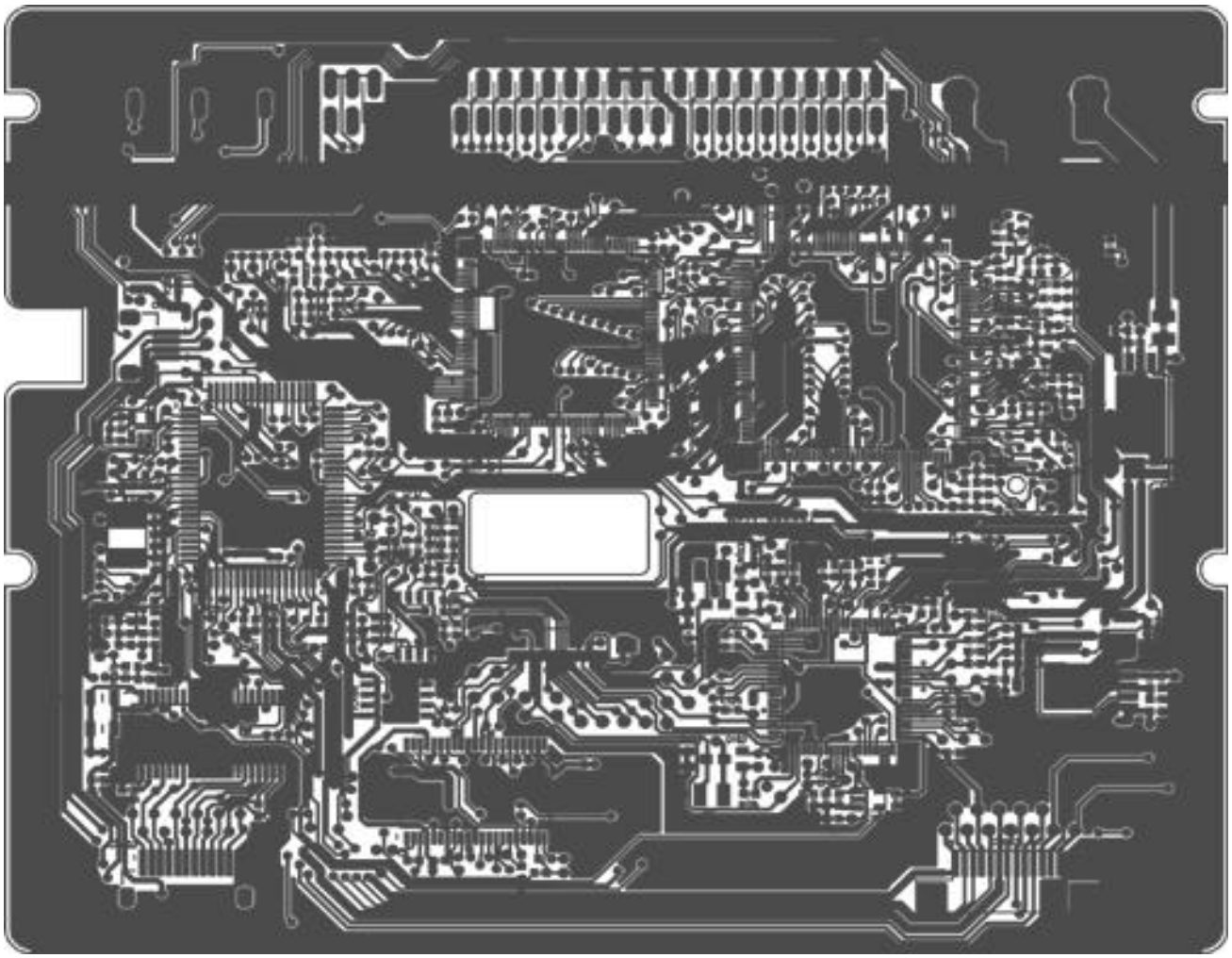
DgnLoc	COMPONENT	DESCRIPTION	QTY	UN
	0204-000203	ISOPROPYL ALCOHOL;-,C2H50H,99%,-	0.900	G
	0204-001103	FLUX;SV95-1F,-,99.937,-	0.850	G
	BG41-00005A	PCB-FRONT;SD-604F,-,-,1.6T*247*162	0.200	PC
C701	2401-001246	C-AL;4.7uF,20%,25V,WT,TP,3.5x5mm,2.	1.000	PC
C702	2401-001246	C-AL;4.7uF,20%,25V,WT,TP,3.5x5mm,2.	1.000	PC
C703	2401-000249	C-AL;100uF,20%,10V,GP,TP,6.3x5,2.5	1.000	PC
C704	2401-001476	C-AL;47uF,20%,10V,GP,TP,6.3x5mm,2.5	1.000	PC
C705	2401-000249	C-AL;100uF,20%,10V,GP,TP,6.3x5,2.5	1.000	PC
C706	2401-000213	C-AL;100nF,20%,50V,GP,TP,3x5,2.5	1.000	PC
C707	2401-000213	C-AL;100nF,20%,50V,GP,TP,3x5,2.5	1.000	PC
CN701	BG41-00004A	FPC;FFC-FRONT,0.3,13P,SD-604F	1.000	PC
D701	0601-001332	LED;CBI,GRN,2.9mm,567nm	1.000	PC
IC701	1201-001373	IC-OP AMP;3541,SOP,8P,173MIL,DUAL,0 DB,P	1.000	PC
JK701	3722-001338	JACK-DC POWER;6P/3C,3.6mm,SN,BLK,NO	1.000	PC
L703	3301-000009	CORE-FERRITE BEAD;AB,2.0x1.25x0.9mm,-,-	1.000	PC
L704	3301-000009	CORE-FERRITE BEAD;AB,2.0x1.25x0.9mm,-,-	1.000	PC
R701	2001-000010	R-CARBON;68KOHM,5%,1/8W,AA,TP,1.8X3.2MM	1.000	PC
R702	2001-000010	R-CARBON;68KOHM,5%,1/8W,AA,TP,1.8X3.2MM	1.000	PC
R703	2001-000515	R-CARBON;220OHM,5%,1/8W,AA,TP,1.8X3.2MM	1.000	PC
R704	2001-000290	R-CARBON;10KOHM,5%,1/8W,AA,TP,1.8X3.2MM	1.000	PC
R705	2001-000281	R-CARBON;100OHM,5%,1/8W,AA,TP,1.8X3.2MM	1.000	PC
SW701	3404-001030	SWITCH-TACT;12V,50MA,100±30GF,7.1X7.0X1	1.000	PC
SW702	AH34-22001B	SWITCH-PUSH LEVER;DC5V,-,100,5.7mm,40g,2	1.000	PC
VR701	2101-001004	VR-ROTARY;20Kohm,30%,0.03W,TOP	1.000	PC
W701	3811-000389	WIRE-NO SHEATH CU;SPCW,300V,52.4mm,1/0.5	1.000	PC
W702	3811-000389	WIRE-NO SHEATH CU;SPCW,300V,52.4mm,1/0.5	1.000	PC
W703	3811-000389	WIRE-NO SHEATH CU;SPCW,300V,52.4mm,1/0.5	1.000	PC
W704	3811-000389	WIRE-NO SHEATH CU;SPCW,300V,52.4mm,1/0.5	1.000	PC
W705	3811-000389	WIRE-NO SHEATH CU;SPCW,300V,52.4mm,1/0.5	1.000	PC
W706	3811-000389	WIRE-NO SHEATH CU;SPCW,300V,52.4mm,1/0.5	1.000	PC
W707	3811-000389	WIRE-NO SHEATH CU;SPCW,300V,52.4mm,1/0.5	1.000	PC

8.Block Diagram

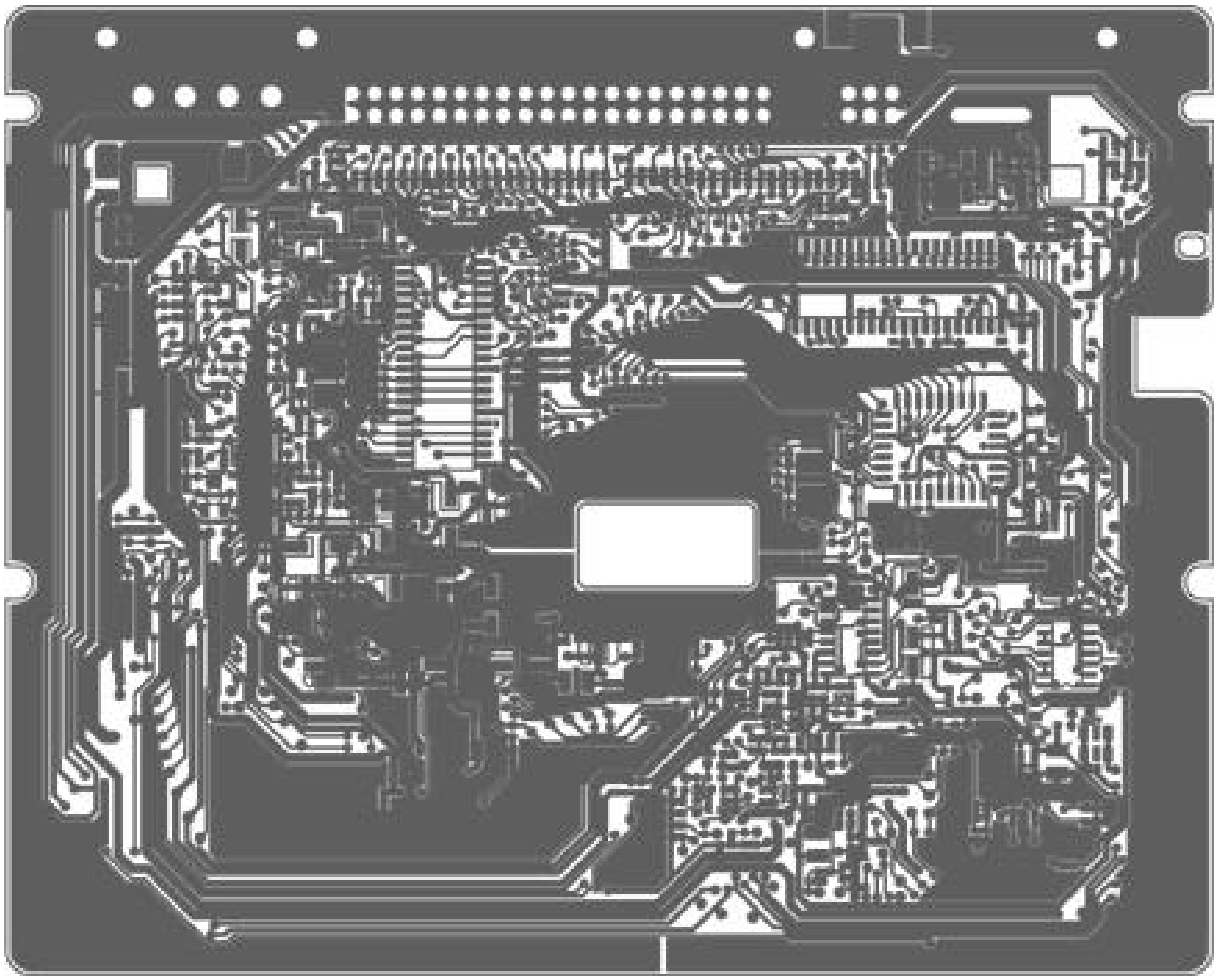


9. MAIN Board

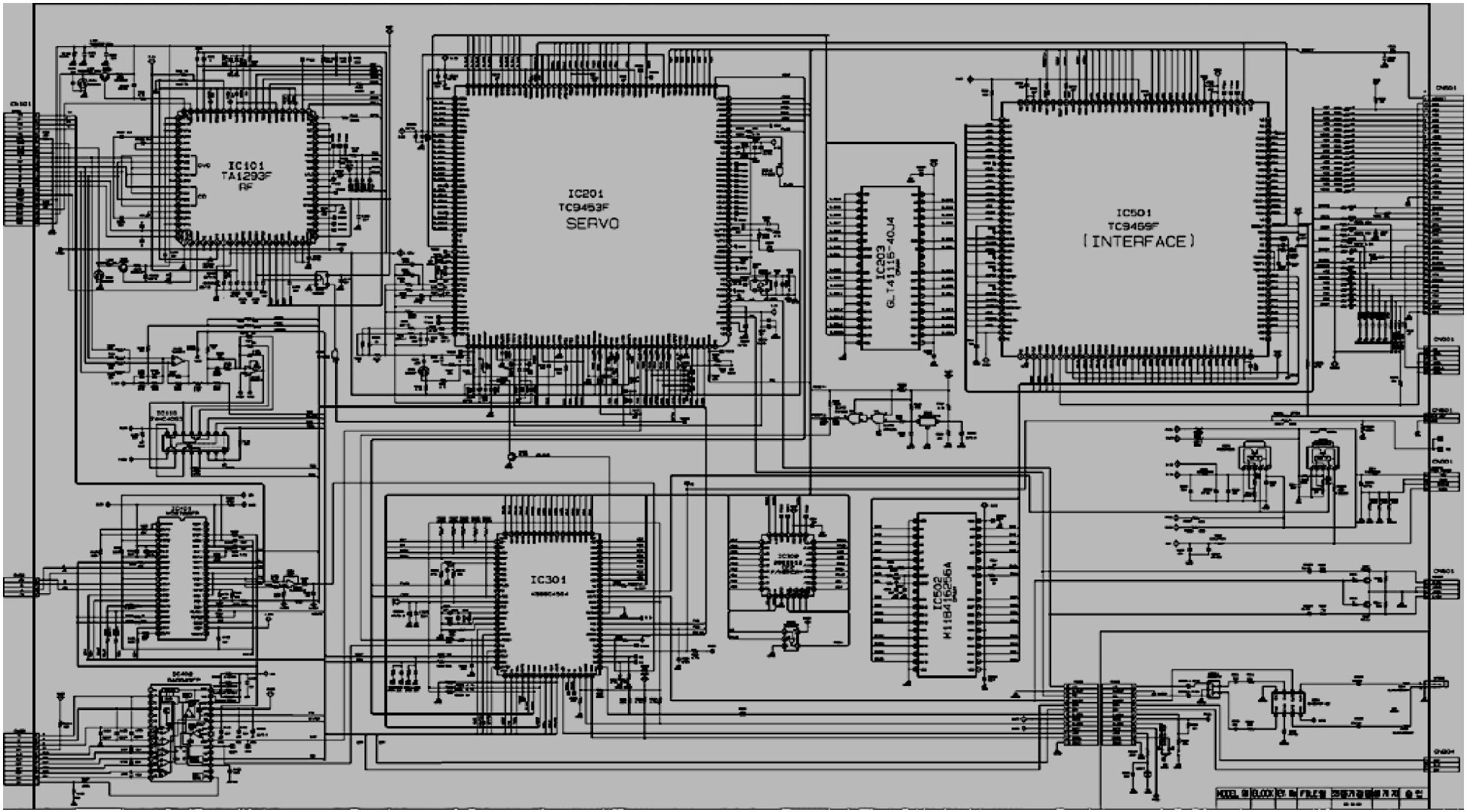
Operation Position



Operation Position



10.Schematic Diagram

10-1 DRIVE PART ---------- 10-2

10-1 DRIVE PART